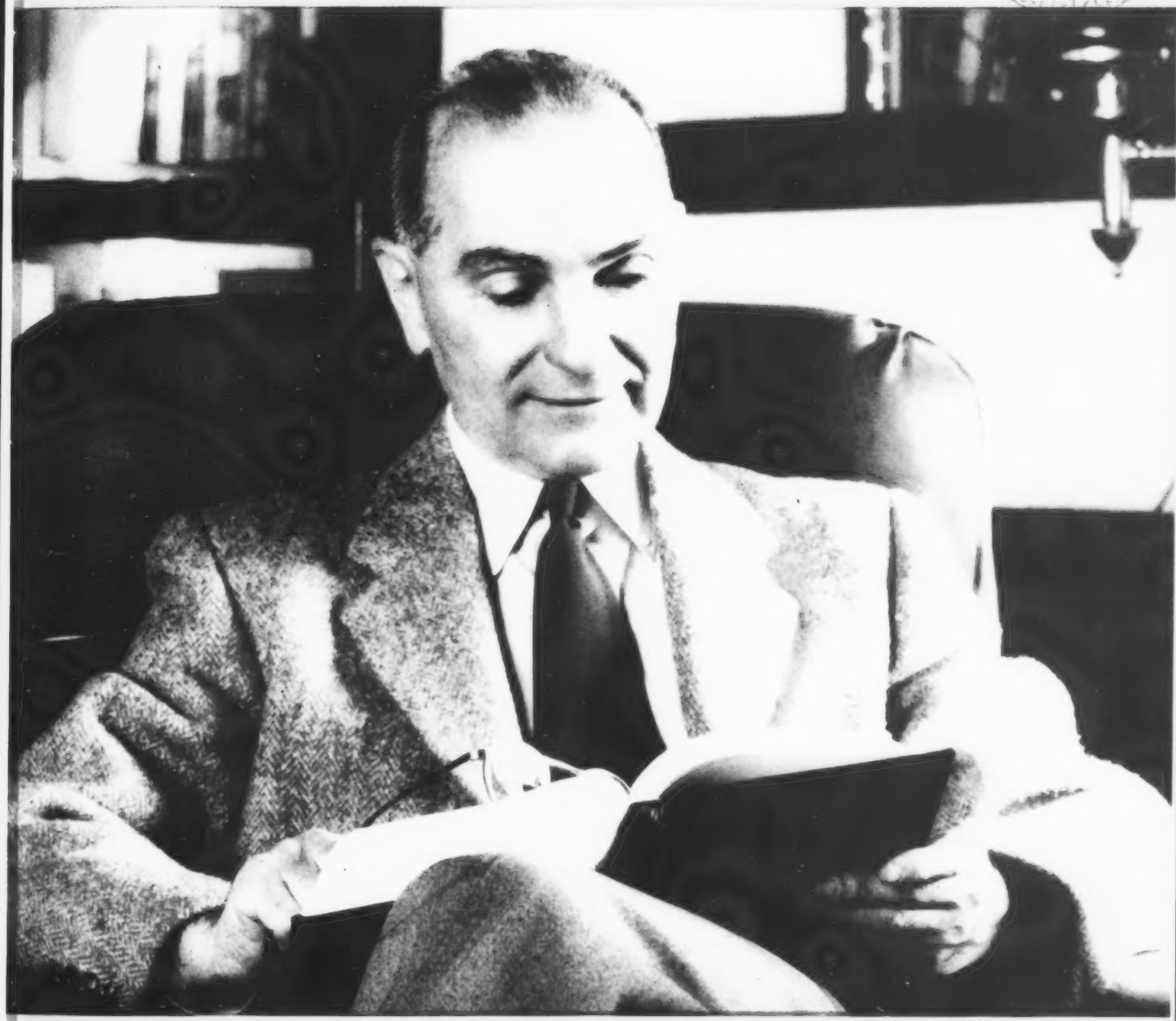
SOAP AND CHEMICAL SPECIALTIES

JULY 1959

HOUSTON PUBLIC



Cyril G. Fox, who was recently reelected president of Fels & Co., 93 year old Philadelphia soap and detergent firm, is first person outside of Fels family to hold the office.

Liquid detergent sales soar 45
Evaluation of aerosol flow properties 71
Factors affecting gloss of polishes 79
Trends in home laundering appliances 54

Faster-selling paint removers begin with...

Formulations data and Facts on SOLVAY METHYLENE CHLORIDE

Yours for the asking—this wide variety of Solvay technical literature and folders, plus objective articles from the chemical press, to help you evaluate Solvay® Methylene Chloride for your paint remover formulation.

This chloromethane solvent is the ideal active ingredient for products designed for the growing "do-it-yourself" market. It is *safe*—non-flammable, low in toxicity—yet *effective*. Rapidly removes a wide range of finishes, including stubborn, caustic-resistant organic types, from a great variety of bases—wood, aluminum, many others attacked by caustic. Perfect for scrape-off, flush-off or aerosol formulas.

Solvay Technical Service can also help you plan and compound paint remover specialties.

Sodium Nitrite • Calcium Chloride • Chlorine • Caustic Soda • Caustic Potash Potassium Carbonate • Sodium Bicarbonate • Chloroform • Methyl Chloride Soda Ash • Vinyl Chloride • Ammonium Chloride • Methylene Chloride • Carbon Tetrachloride • Snowflake® Crystals • Monochlorobenzene • Ortho-dichlorobenzene Para-dichlorobenzene • Ammonium Bicarbonate • Hydrogen Peroxide • Aluminum Chloride • Cleaning Compounds • Mutual® Chromium Chemicals

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

SOLVAY branch offices and dealers are located in major centers from coast to coast.

Mail to SOLVAY for sample, literature, technical aid!

Please send: DM 79

- ☐ Solvay Methylene Chloride sample
- ☐ Chemical Week article—"Brighter Finishes Spotlight New Strippers"
- ☐ Fact folder OC-11
- ☐ "Non-Flammable Paint Strippers"—3 articles
- ☐ Solvay Methylene Chloride for Paint Removing Compounds 3-558
- ☐ Effect of Methylene Chloride on Nylon Paint Brushes 5-55
- ☐ Evaporation retarders for Paint Removers 8-55
- ☐ Research on Thickeners for Paint Removers 9-55
- ☐ Methylene Chloride Paint Brush Cleaner 12-55
- ☐ See attached letter on remover I want to market

Name _____

Position _____

Company _____

Phone _____

Address _____

City _____ Zone ____ State _____

You should keep women much on your mind. They like the very fine fragrances. You're giving them the fine fragrances when you perfume fine products with traditional good scents from Norda.
Rely on great skills—from Norda. Expect even greater to come from continuous research and development in quality, creator of confidence.
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CHICAGO · LOS ANGELES · SAN FRANCISCO
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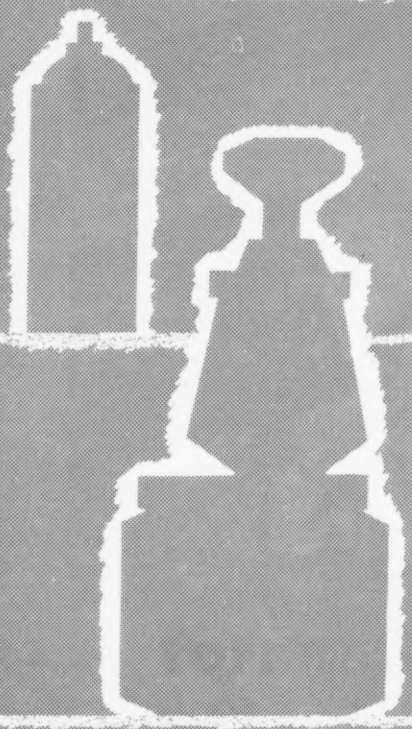
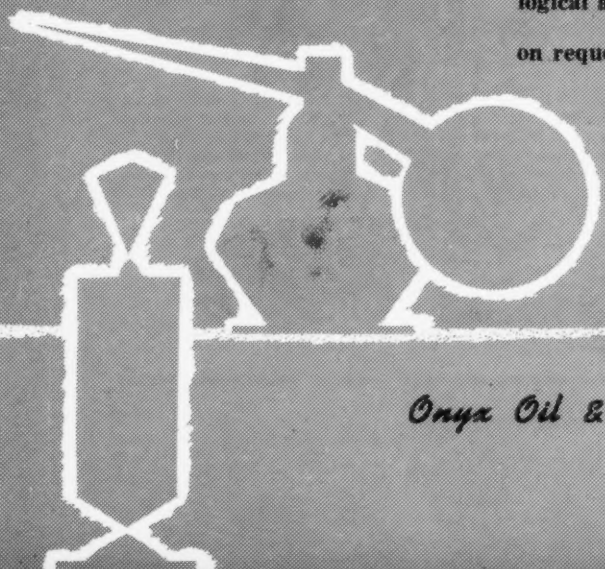


New Ammonyx 4002

. . . high conditioning ability!
. . . no skin irritation!

AMMONYX 4002 . . .
Another ONYX "first" for applications that include conditioning and static control in aerosol hair sprays and shampoos, hydrophobic emmollient in creams and lotions, cuticle softener, palliative treatment for brittle nails, and anti-drying agent in high-staining lipsticks. A recrystallized stearyl dimethyl benzyl ammonium chloride extremely substantive to hair and skin.
Samples, technical information, dermatological and toxicological data available on request.

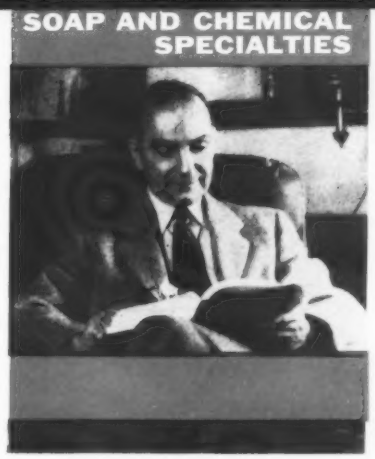


ONYX CHEMICALS

Onyx Oil & Chemical Company
JERSEY CITY 2, NEW JERSEY
Our 49th Year

Volume XXXV, No. 7—July, 1959

Cover photo: Cyril G. Fox, just re-elected president of Fels & Co., 93 year-old Philadelphia soap and detergent firm, is first person outside of the Fels family to hold the office. Founded in 1866, Fels has been in continuous existence ever since. Mr. Fox was selected to head the firm in 1950 upon the death of Samuel S. Fels, who had served as president for many years. Under Mr. Fox' guidance, a new era opened for Fels & Co. Sales increased, new products were added and research activities were stimulated.



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IN THIS ISSUE

37 IN BRIEF AS THE EDITOR SEES IT

41 AS THE READER SEES IT

43 DETERGENTS, CLEANSERS, SOAPS

45 LIQUID DETERGENT SALES SOAR

48 AUTOMATED SURFACTANT PLANT, *by F. V. Wells*

51 WHY A LIMIT TO FLUORESCENCE OF OPTICAL BLEACHES? *by Eugene Allen*

54 TRENDS IN HOUSEHOLD LAUNDERING APPLIANCES, *by James Alaback*

56 INSTRUMENTATION OF PERFUME ANALYSIS, *by Victor A. Johnston*

63 CHEMICAL SPECIALTIES

67 TOOLS OF PREVENTIVE MEDICINE: INSECTICIDES & GERMICIDES, *by Lawrence B. Hall*

71 FLOW EVALUATION OF AEROSOLS, *by L. Cohen, R. J. Meyer and J. S. Wolff*

79 FLOOR POLISH GLOSS & VISCOSITY, *by B. Berkeley and D. Schoenholz*

85 AUTO COOLING SYSTEM CORROSION (Part II), *by M. A. Boehmer and J. W. Compton*

104 CSMA MEETING PICTURES

109 PACKAGING

111 PACKAGING NOTES

113 NEW PRODUCTS PICTURES

120 TRADE MARKS

123 PRESSURE PACKAGING

137 PRODUCTION

139 SYNTHETIC DETERGENT BARS

147 NEW PATENTS

149 PRODUCTS AND PROCESSES

151 BULLETINS AND EQUIPMENT

155 NEWS

177 PROFESSIONAL DIRECTORY

179 CLASSIFIED ADVERTISING

184 ADVERTISERS' INDEX

185 MEETINGS CALENDAR

186 TALE ENDS

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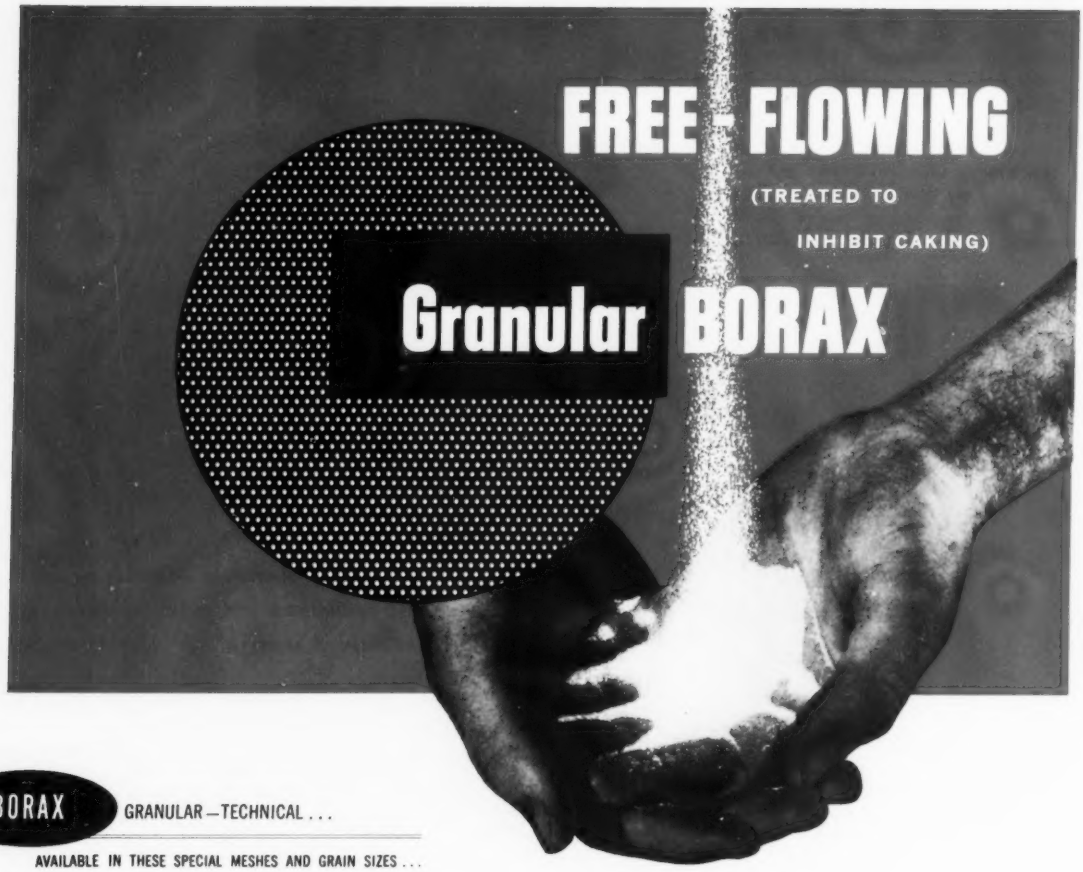

BORAX GRANULAR—TECHNICAL . . .

AVAILABLE IN THESE SPECIAL MESHES AND GRAIN SIZES . . .

Name & Screen Designation	Typical Particle Size Range U. S. Standard Sieve No.		Screen Specification U. S. Standard Sieve No. When Packed	
Granular 8/40 (Special Mesh)	+ 8 + 40	Nil 96.8%	+ 45	min. 95%
Granular 8/60 (Special Mesh)	+ 8 + 60	Nil 80.0%	+ 8 + 100	none min. 90%
Granular 30/60 (Special Mesh)	+ 30 + 60	0.5% 69.8%	+ 30 + 100	max. 1% min. 80%
Granular 30/70 (Special Mesh)	+ 30 + 70	0.3% 71.0%	+ 30 + 40	max. 1% max. 20%
Granular 30/80 (Special Mesh)	+ 30 + 80	0.8% 76.6%	+ 30	max. 1%
Granular 30/100 (Special Mesh)	+ 30 + 100	Nil 86.7%	+ 35 + 100	none min. 85%
Granular 40/100 (Special Mesh)	+ 40 + 100	Nil 89.0%	+ 40 + 100	max. 0.5% min. 88%
Granular 40/140 (Special Mesh)	+ 40 + 140	0.1% 88.8%	+ 35 + 100	none min. 50%
Granular 40/200 (Special Mesh)	+ 40 + 200	0.1% 84.1%	+ 30	none
Granular 60/200 (Special Mesh)	+ 60 + 200	0.1% 66.7%	+ 60	max. 1%
Granular 80/200 (Special Mesh)	+ 80 + 200	2.0% 67.6%	+ 60 + 80	none max. 5%

Powdered Hand Soaps are better performers when borax is part of their make-up. They work better in any water — cut grease quicker — and feel smoother. Our granular borax is free-flowing and 100% soluble. This material is now available to you in any of the many special uniform meshes listed at left. Samples, bulletins, or technical advice can be obtained from the sales office nearest to you. Write today!

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Make STEPAN Your "SHQ"*

*(surfactant headquarters)

LAURYL SULFATES

Higher carbon chain fatty alcohol sulfates including sodium, ammonium, diethanolamine, triethanolamine and magnesium salts. These products offer a high degree of uniformity and are available in paste, liquid or powder form.

ETHOXYLATING

The new Stepan Plant near Joliet, Illinois, is fully equipped to serve your requirements for reactions involving a labile hydrogen atom and ethylene oxide. Also available is custom esterification involving fatty acid and an amide, alcohol or other similar compounds.

NON-IONICS

Stepan offers a wide selection of fatty acid-amine condensate type of non-ionics as well as nonyl phenoxy polyoxyethylene ethanol type non-ionic detergent and emulsifiers for all types of cleaning formulations.

CUSTOM BLENDING

The completeness of the Stepan line makes possible important savings. From this wide selection less than carload ingredients totalling a carload where suitable can be blended at small additional cost and carload price effected. Or, the individual items can be shipped as mixed carload at carload prices.

ALKYLOLAMIDES

Both conventional and new high purity alkylolamides. Stepan high purity amides have a guaranteed minimum amide content of 90%. Also amides to your specifications. Our large capacity may well effect important savings for you.

LABORATORY FACILITIES

The Stepan Chemical Company has complete laboratory facilities to assist you in every way possible toward developing the product most suitable to your needs. Our technical staff will also be pleased to consult with you on new products as well as new applications of our present products.

427 W. Randolph St., Chicago 6, Illinois
Telephone: STate 2-4711

DOW | **CHEMICAL NEWS stimulates profits**

Profits don't just *grow* in the soap and chemical specialties field. They're cultivated and nurtured with a steady supply of new developments, new materials, new techniques. Chemical advancements are a major factor in stimulating this profitable growth. This series of news reports will enable you to single out the chemical news with a cash value for your field.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

ROUTE TO:

_____

_____

_____

_____

_____

POLYOL "SUPERMARKET" OFFERS WIDEST PROFIT SELECTION

From the "World's Widest Line of Polyols" at Dow, soap and chemical specialties manufacturers can select the most profitable polyols for their formulations. They save time and trouble in this one-stop shopping center for polyols. And they're the first to know when a new polyol with profit possibilities is made available.

The soap and chemical specialties industry has a hearty and diversified appetite for polyols as intermediates, plasticizers, emulsifiers, lubricants, antifoamers, solvents and other uses. That's why so many producers take their list of polyol requirements straight to the "men who make the most of them".

Nowhere in the world . . . literally . . . can manufacturers find such a wide selection of polyols as is available from Dow. This is a convenience, of course. But it's also profitable in other ways. The service is better. The storehouse of experience is fuller. And the newest polyols are apt to be found in the "polyol supermarket" first.

Picking the right polyol can mean the difference between profit and loss to many formulators.

Propylene Glycol U.S.P. is a good example of why polyol business is rushing. The unequaled combination of properties of this widely used polyol has made it practically a staple item to manufacturers of many chemical specialty products.

In lotions, creams, soaps and other products, Propylene Glycol U.S.P. serves as an emulsifier aid, solvent, wetting agent, preservative . . . whatever the script demands of this versatile performer.

Polypropylene Glycols are in demand as antifoam agents in paints and serve as lubricants and solvents in many other chemical products. In fact, chemists are able to blend polypropylene glycol properties to suit their needs, simply by combining various members of the Dow series.

Nothing to sneeze at is the possibility that glycol formulations may play a big part in new aerosols being developed as space sanitizers. Several universities have instituted and completed studies in the development of this field.

The world's widest line of polyols is getting ever wider as Dow technical service and development constantly come forth with new polyols to

serve specific needs. Recent additions to the line, for example, are Hyprose®, for use as surface-active agent, intermediate, plasticizer and urethane cross-linking agent; and Hyprin®, which shows promise as plasticizer and alkyd resins intermediate.

As a basic producer of ethylene oxide and propylene oxide, Dow has been in a position to accommodate the rapidly expanding production needs for these chemicals and their derivatives. Qualified polyol experts are always available to help the customer find what he wants . . . or to help him discover what he needs from the "polyol supermarket".

AROMATICS:
they help make sales scents

The sweet smell of success for many soap and cosmetic manufacturers these days comes from the many synthetic essences produced by Dow. And though the essences are synthetic, their sales power is real.

Essences such as coumarin, Dorisyl®, Rosaryl® and Citroviol® are tempting examples of Dow aromatics which have customers following their noses back to the right shelf again and again. The stable character of these synthetic essences makes them persistent salesmen, too. They stay on the job long after more fragile fragrances may have faded and been forgotten.

Chemical inventiveness of Dow aromatic specialists continually searches for new essences to spur sales of soaps, cosmetics and perfumes . . . at a reasonable cost. At the first hint that sales are going stale, manufacturers may avail themselves of Dow's consultation service. It helps make sales scents.

DOW CHEMICALS
basic to the soap industry

Raw Materials • Extractive Agents
Purifiers • Aromatics • Solvents
Coagulants • Preservatives
Chelating Agents
Ion Exchange Resins • Alkalies
Ethylene and Propylene Oxide

THE DOW CHEMICAL COMPANY
Midland, Michigan

DOW

CHELATING AGENTS: *they sell soap in spite of hard water*

Soap makers no longer have to surrender hard water markets to syndets. Dow chelating agents are giving soaps the same cleaning power as syndets in water of 7 grains hardness . . . at the same cost!

These chelating agents, manufactured by Dow under the trademark Versene® are solving many metal ion problems that plagued soap sales. Liquid soaps no longer foul dispensers. Shampoos stay crystal clear on standing. And flake soaps compete on an even footing with syndets in moderately hard water.

Versene 100, Versene Powder and Versene Flake are different physical forms of the tetrasodium salt of EDTA . . . most effective of all commercially available chelating agents.

Startling reductions in the cost of Dow chelating agents in recent years have put them within easy reach of soap companies with hard water problems, enabling them to put soap products of competitive price and performance within the eager reach of more customers.

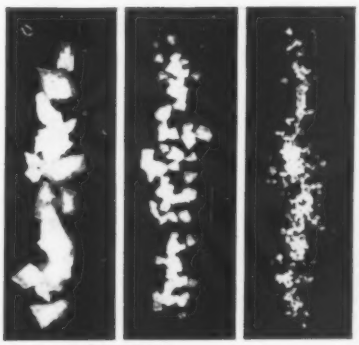
★ ★ ★ ★

If you aren't already profiting from these and other Dow chemicals, discover how you can. We suggest you write for complete information to THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Merchandising Department 971ER7.

DOW CHEMICALS . . . *new and noteworthy*

DOWANOL®
Write for the newly revised book about Dowanol, packed with information on the Dow glycol ether solvents with the widest range of products and properties available in the industry.

METHOCEL®
Agent for added lubricity in auto polish and cleaner formulations diminishes surface friction, saves application elbow grease. Better viscosity control and suspension of abrasives.



CAUSTIC SODA
This workhorse chemical comes to customers in any form they want without delay from Dow's supply network of five producing plants and nine shipping terminals.

DOWANOL DPM
Excellent solvent characteristics of this Dow glycol ether solvent spotlight its value for heavy duty cleaning jobs such as in white sidewall tire cleaner formulations.

For private brand resale buyers of waxes and kindred products

...Your Quality Guide

WATER EMULSION WAXES

Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

CANDY'S SUPREME (standard)
BRIGHT BEAUTY®
CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® #CS
CANDI-WAX #6000

All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

Beauty and Durability

Initial appearance is important, but for a waxed surface to remain beautiful, it must be durable. Durability depends not only on resistance to abrasion of traffic, but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax...beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Over-doing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

Solid Content

The percentage of solid content is not nearly as important as the quality of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Over-waxing and resultant greater difficulty in removal for periodic maintenance may do more harm than good.

Carnauba Wax

The most important features of a good wax...all-around quality of performance...are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba alone imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

Other HIGHEST QUALITY products of CANDY & COMPANY, Inc.

CANDI-COAT 1000, WATER RESIN EMULSION
As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER
For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging...nothing but water to buy or mix in.

Bright Beauty CREAM FURNITURE POLISH
A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits *repeated repolishing* with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX
Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES
A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry cleaner" to keep surfaces waxed protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH
As a glass cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanliness to glass. As a cleaner of silver, it polishes to a high lustre *without* abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX
Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove...free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER
Cleans and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

CONTAINER SILK SCREEN LABELING
Now you can have dramatic, colorful labeling of your private brand name on all 55, 35, 30, 20 & 15 *gal.* drums and 5 *gal.* pails. This added service is accomplished right in our plant...your inspection invited...or write for details.

Candy & Company, Inc
EST. 1891

Wax Specialists for over 65 years

2515 W. 35th ST., CHICAGO 32

PILOT ABS-99 builds better end products because ABS-99 *is* a better product to start with. ABS-99 *is* the highest dodecyl benzene sulfonic concentrate commercially available: 98% concentrated with extra activity—14% more active ingredient than ordinary 88% pure sulfonics.

ABS-99 is purer. *So pure, in fact, that it may be kept in plain steel containers!*

Pilot ABS-99 offers greater compatibility with oils and other organic substances; it prevents precipitation because of its low sulfate content, lowest of any similar material on the market.

The uniqueness of this new standard of purity is a result of Pilot's *cold processing:* built in are high detergency and foaming character—stabilized are its light color, viscosity and low odor. You'll save, additionally, on perfuming.

Pilot ABS-99 adds greater flexibility to your detergent formulations, for it is the basic building block for all sulfonic detergent products. So, for superior products—start with the best. Write for technical literature and samples right now.

LEADS THE WAY TO BETTER PRODUCTS
PILOT

PILOT *California Co.*

215 WEST 7th STREET • LOS ANGELES 14, CALIFORNIA

Checked your caustic costs lately?

. . . upon request, a Wyandotte technical-service man will survey your requirements — help you decide if a switch from 50% to 74% caustic is economical

An increase in your caustic requirements, or a change in freight rates can alter your economic position almost overnight in regard to 50% or 74% concentrations. That's why it's wise to check your caustic costs periodically.

Here's an easy way to check: first, using the chart on the opposite page, plot your position in terms of annual requirements and freight rates to see if a saving is possible by switching to 74% caustic (send for Wyandotte's handy free guide, "74% or 50% caustic soda, which for you?" for more complete details). Then, with a basic understanding of your economic position, call in a Wyandotte technical-service man. Together you can analyze all the factors: the cost of concentration; end use of the caustic soda; existing storage and handling facilities; quantity of caustic consumed; plant location.

The results may reveal no savings at all by switching to 74% liquor, or you could save thousands of dollars. In either case, the assistance of a technically trained Wyandotte representative with his familiarity in all phases of caustic soda storage, handling, and uses is at your disposal . . . and there's no obligation. Get in touch with us today. *Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan. Offices in principal cities.*

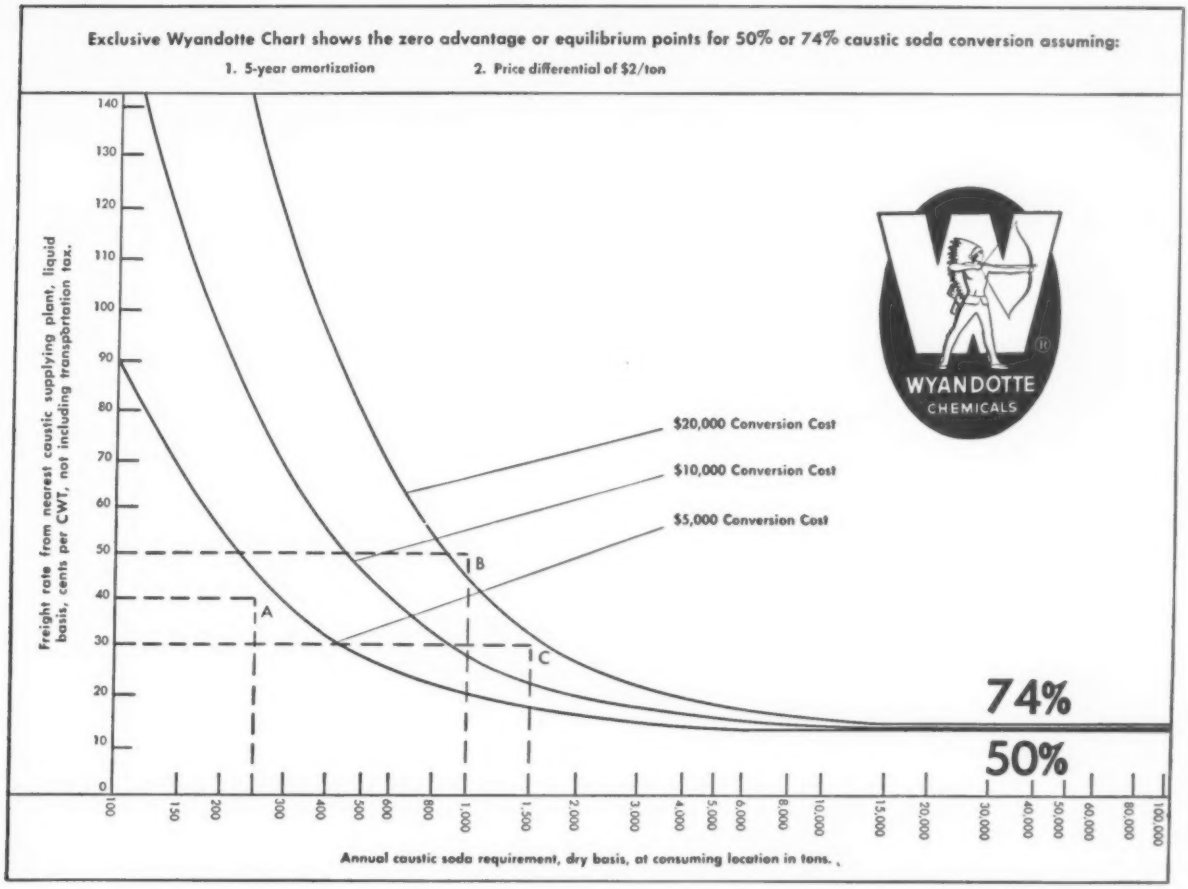
Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

1 After plotting your economic position on Wyandotte chart, call in your Wyandotte technical-service man. This study may bring to light savings of thousands of dollars in freight charges by changing to 74% liquor.

2 Wyandotte engineers — with broad experience in applications of caustic soda and the correct equipment for its proper handling — assist in designing heat exchangers, cooling tower piping, storage tanks, and materials of construction.


Exclusive Wyandotte Chart shows the zero advantage or equilibrium points for 50% or 74% caustic soda conversion assuming:
1. 5-year amortization
2. Price differential of $2/ton
Freight rate from nearest caustic supplying plant, liquid basis, cents per CWT, not including transportation tax.
$20,000 Conversion Cost
$10,000 Conversion Cost
$5,000 Conversion Cost
A
B
C
74%
50%
Annual caustic soda requirement, dry basis, at consuming location in tons.

HOW TO USE CHART

EXAMPLE A: Freight from nearest producing point to consuming point is 40 cents per hundredweight. Annual consumption by consuming plant is 250 tons caustic soda, dry basis.

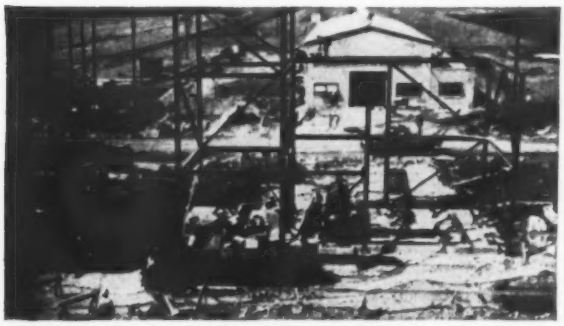
ANSWER: Because Point A lies to the left of the curves, the plant should purchase caustic soda as a 50% liquid.

EXAMPLE B: Freight from nearest producing point to consuming point is 50 cents per hundredweight. Annual consumption by consuming plant is 1000 tons caustic soda, dry basis.

ANSWER: Because Point B lies to the right of the curves, the plant should purchase caustic soda as a 74% liquid, even though additional equipment investment of as much as $20,000 might be found necessary.

EXAMPLE C: Freight from nearest producing point to consuming point is 30 cents per hundredweight. Annual consumption by consuming plant is 1500 tons caustic soda, dry basis.

ANSWER: Because Point C lies between the $10,000 curve and the $20,000 curve, the plant should purchase 50% caustic soda if the additional investment necessary exceeds about $15,000, or should purchase 74% caustic soda if the additional investment is less than about $15,000.



3 When construction problems arise, such as the location of equipment for most efficient operation or more economical installation . . . alternate valves or new materials of construction . . . the Wyandotte technical-service man is available for advice.

4 The Wyandotte technical-service man is on hand to help unload the first tank car of 74% caustic . . . seeing that the outlet leg is properly steamed, diluting water correctly proportioned, temperature controlled, safety precautions followed.

To make detergents that sail right through the dirty work!

ENJAY OLEFINS

• TETRAPROPYLENE • TRIPROPYLENE

Cleaning sails . . . cleaning house . . . cleaning almost anything — detergents can do it and do it better than anything else. The basic ingredients in many detergents are Enjay Olefins: Tetrapropylene and Tripropylene. Like all Enjay petrochemicals, Enjay Olefins are known throughout industry for their uniform purity and high quality. Remember: for top-quality detergents, use Enjay Tetrapropylene and Tripropylene.

Enjay serves industry with a complete line of petrochemicals. Prompt deliveries are made from conveniently located distribution points.

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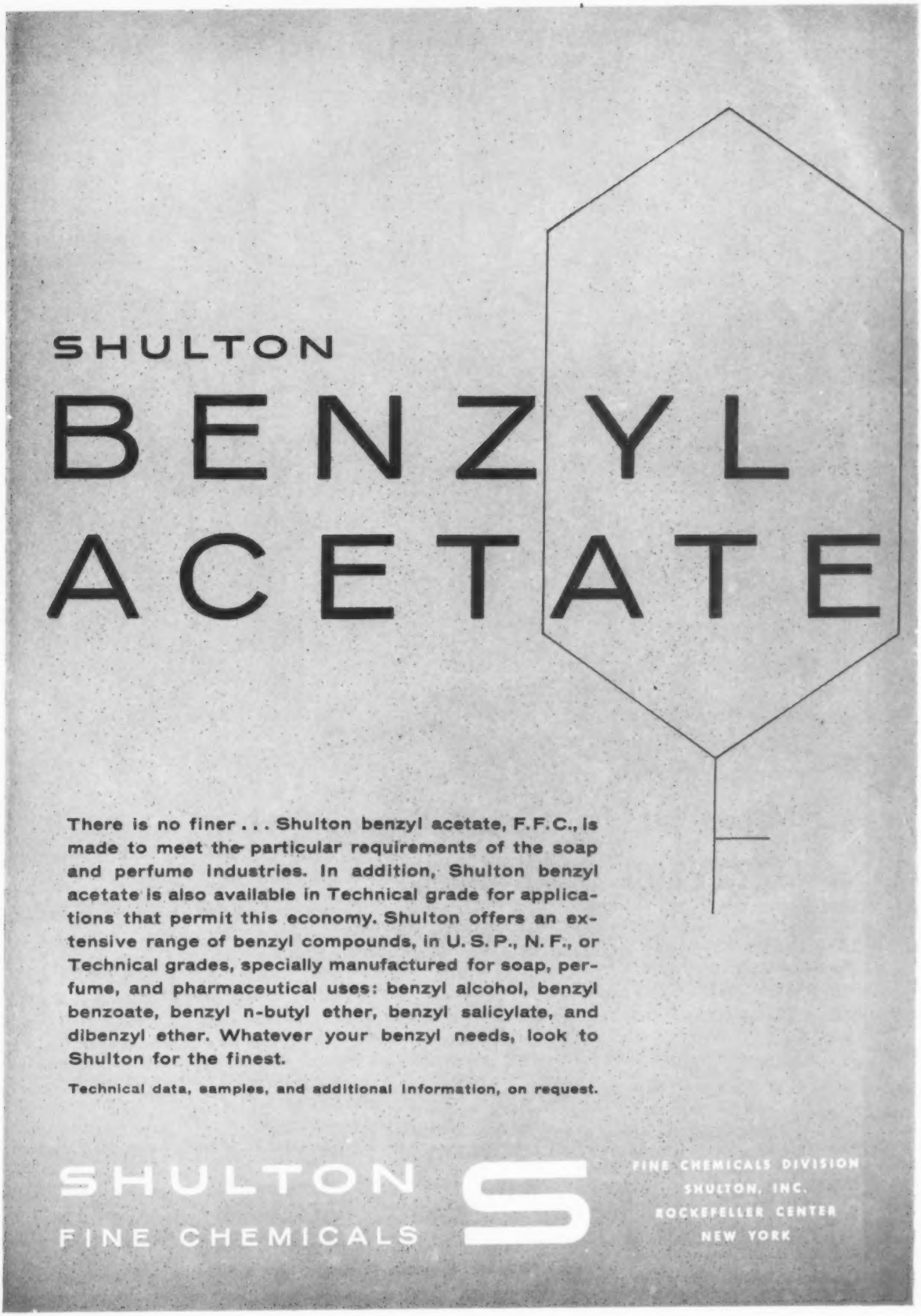
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ACETATE
There is no finer . . . Shulton benzyl acetate, F.F.C., is made to meet the particular requirements of the soap and perfume industries. In addition, Shulton benzyl acetate is also available in Technical grade for applications that permit this economy. Shulton offers an extensive range of benzyl compounds, in U. S. P., N. F., or Technical grades, specially manufactured for soap, perfume, and pharmaceutical uses: benzyl alcohol, benzyl benzoate, benzyl n-butyl ether, benzyl salicylate, and dibenzyl ether. Whatever your benzyl needs, look to Shulton for the finest.
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this "brine thief" helps guard the quality of WESTVACO® CAUSTIC!

By periodic thief-sampling and analysis, he double-checks the automatic controls that regulate the continuous flow of brine to our modern electrolytic cells. He makes doubly sure that optimum salt concentration is maintained.

This is another example of the extra care on which the consistent high quality of Westvaco Caustic depends. It's one more good reason for you to depend on Westvaco to supply your caustic needs.

We're located at South Charleston, W. Va., ready to give you unbeatable service from a newly modernized and expanded plant. Technical service facilities have been enlarged, too, so we're better than ever able to serve you in every way.

CAUSTIC SODA
Liquid 73%;
Liquid 50%, Regular and Low-Chloride Grades;
Flake, Solid and Ground.

CAUSTIC POTASH
45% and 50% Liquid;
Flake and Solid.

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Westvaco Chlor-Alkali Division

General Sales Offices:
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Wash their mittens... Cleaner

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NEOLENE 400

The proven chemical intermediate . . . Neolene® 400 . . . is used by many of the world's leading processors of detergents and surfactants. It is an alkyl benzene of the highest quality and is an exceptional base for both liquid and dry detergents. Why not put Neolene 400 to work for you? Its many characteristics include:

- Stability during sulfonation
- Uniformity and purity
- Excellent color and odor
- Makes detergents with exceptional wetting, cleansing and foam properties

Petrochemical know-how from the ground up!

CONOCO Petrochemicals®

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CONSIDER CONTINENTAL'S:

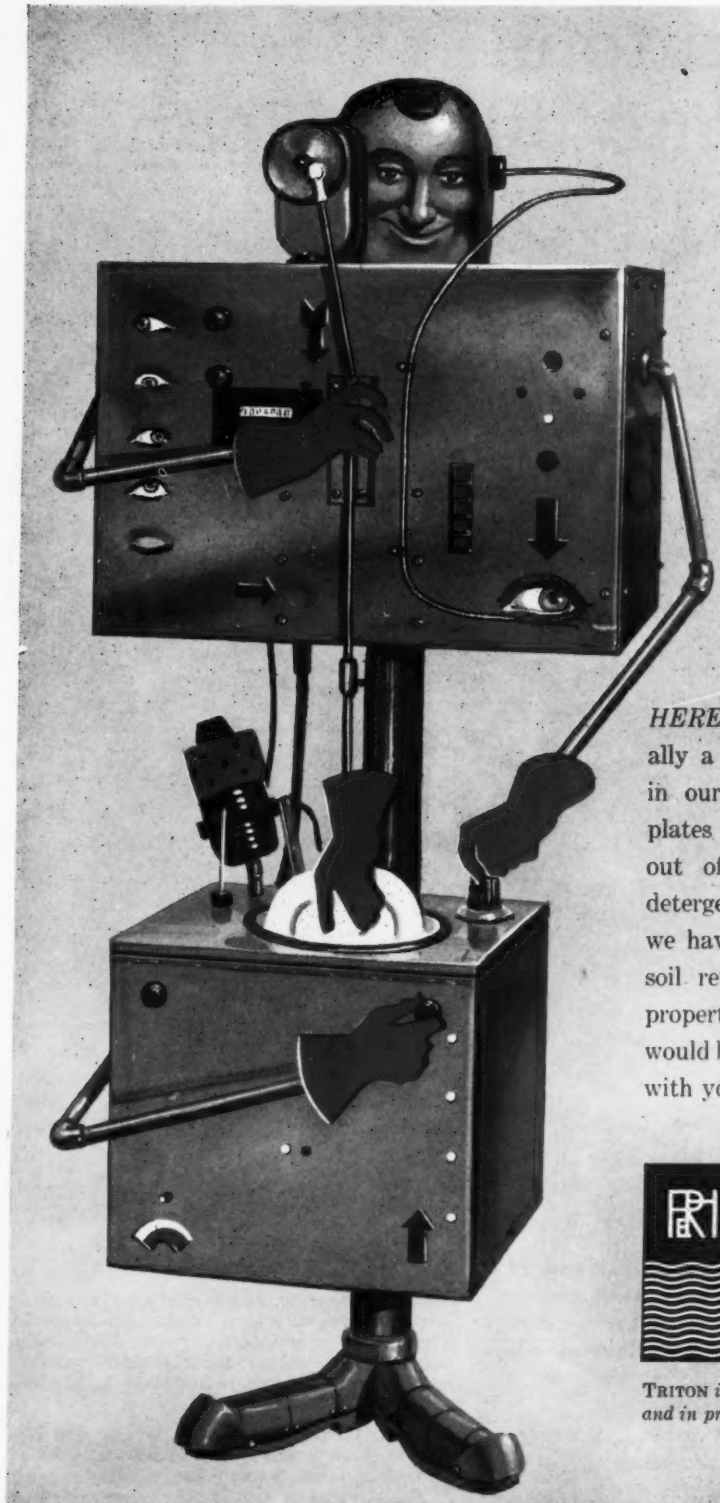
QUALITY—Neolene 400 is consistently high in quality as are all other Conoco petrochemicals. This reputation for quality is the result of steadily improved production facilities and Conoco's determination to find better ways to produce superior products.

QUICK DELIVERY—Conoco's extensive distribution facilities assure you fast service, whether by tank car, tank truck, or barge. This assurance of quick, efficient delivery simplifies your own inventory and storage problems.

TECHNICAL ASSISTANCE—Whether you purchase in large or small quantities, Conoco technicians stand ready to help you improve a product or a process, to find new applications, to suggest ways of cutting costs.

May we suggest that you call or write today for samples and more information about Neolene 400. **CONTINENTAL OIL COMPANY,** PETROCHEMICAL DEPARTMENT

1270 Avenue of the Americas, N.Y. 20, N.Y. • Export Division, Englewood, New Jersey • European Sales Office: Box 1207, Rotterdam, The Netherlands



DISHPAN DAN

(the laboratory man)

helps improve

DETERGENT FORMULATIONS

HERE'S HOW: Dishpan Dan is actually a custom-made mechanical device in our laboratories. His job: dipping plates treated with standard soil in and out of dishwater containing TRITON detergent formulations. With his help, we have been able to compile data on soil removal, foam stability, physical properties and cost of formulations. We would be happy to share this information with you. Write to us now.

Chemicals for Industry

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U.S.I. CHEMICAL NEWS

July ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1959

New Managerial Positions Created in U.S.I. Sales

W. E. JOHNSON

Warren E. Johnson, Vincent D. McCarthy and George H. Stanton have been named to fill three new sales management positions which have just been created by U.S.I.

Mr. Johnson, who is appointed Director of Chemical Sales, will have responsibility for Industrial Alcohol and Solvents, Heavy Chemicals, Sodium and Special Products Sales, with the manager of each product group reporting to him. Mr. McCarthy as Director of Plastics Sales, will have responsibility for management of polyethylene sales, as well as other plastic materials that the company might produce in the future. Mr. Stanton, who will assume the position of Director of Field Sales later in the year, will supervise the activities of regional sales offices. The three new appointees will report to Alden R. Ludlow, Jr., Vice President in Charge of Sales.

V. McCARTHY

G. H. STANTON

"We are confident these important changes will considerably strengthen our sales organization," Mr. Ludlow says, "and enable us to keep pace with our increasing business."

The new Director of Chemical Sales, Warren Johnson, has been Manager of Alcohol and Chemical Sales for U.S.I. Vincent McCarthy, Director of Plastics Sales, has been Manager of PETROTHENE® Polyethylene Sales. And George Stanton, Director of Field Sales, has been Manager of the U.S.I. Chicago Sales Division.

All-Titanium Centrifugal Pumps and Valves Are Now Being Produced

Centrifugal pumps and valves made of commercially pure titanium have been developed to meet the ever increasing need for more corrosion resistant equipment in the chemical industry. Made to order, pumps are available in sizes from 1″ x 1″ and capacities from ½ gpm. Valves are available in a size range of 1″ through 4″, and nonlubricated and nonsticking plug valves are also available in sizes of ¼″ through 3″.

This equipment, designed in titanium specifically for the highly corrosive environments found in chemical plants, is said to be very competitive pricewise with similar units fabricated from nickel-base alloys. The titanium used is a product of Mallory-Sharon Metals, owned one-third by U.S.I.

1958 Aerosol Survey Results Are In; Production of Nonfood Units Estimated at 20% Above 1957

Hair Sprays Still Sales Leader; Dental Cream, Pet Product Sales Large Enough for Separate Statistical Categories.

At the Chicago meeting of the Chemical Specialties Manufacturers' Association this May, it was announced that an estimated 470 million nonfood aerosol units were produced in the U.S. in 1958, with an approximate value of $470 million. This is an increase of 20% over the 1957 estimate of 390 million units. Estimates are based on reports from 45% (95 out of 211) of the known aerosol fillers in the country, plus reports from container and valve makers. By comparison, CSMA estimated 320 million units in 1956, 240 million in 1955, and 185 million in 1954. Industry production has been climbing steadily over the eight years in which surveys have been made, and has been very rapid when compared to most other industries.

The actual number of units reported for 1958 was 341,383,496. For the third consecutive year, hair sprays were in undisputed first place, accounting for 27% of the total units reported. Although only 92.6 million hair spray units show up on the survey, CSMA believes that over 100 million were actually produced. Room deodorants were reported at 49.8 million units, which indicates a continued growth. The 1957 reported figure was 42 million. CSMA believes that insect sprays, room deodorants, coatings and shaving lather were all actually produced in excess of 60 million units last year, although the reported figures are considerably lower.

Two New Statistical Categories

Dental cream, treated for the first time as a separate category, showed 12.9 million

MORE

NONFOOD AEROSOLS REPORTED IN 1958 COMPARED TO 1957

(figures in millions of units)

Product	1958	1957
Hair Sprays	92.6	94.4
Room Deodorants	49.8	42.0
Shaving Lathers	45.3	50.9
Insect Sprays	42.3	41.5
Coatings	30.1	36.5
Colognes & Perfumes	13.6	17.9
Dental Creams	12.9	*
Household Products Other Than Room Deodorants	25.9	28.1
Personal Products Other Than Hair Sprays, Shaves, Dental Creams, Colognes & Perfumes	14.5	12.4
Miscellaneous	14.4	15.6
TOTALS	341.4	339.3

*not reported separately in 1957

Researchers Uncover More Uses of Methionine in Body

Recent work with radioisotopes by the Biology and Medicinal Division of the Argonne National Laboratory has revealed that methionine in the body, when converted to adenosylmethionine, can participate in epinephrine synthesis; react with niacin; enter the brain; and help form spermine, ergosterol and histamine.

New Ultraviolet Absorber Developed for Polyethylene

A new compound now in the process development stage has recently been made available to polyethylene manufacturers for evaluation as an ultraviolet absorber. The material — 2,2′-dihydroxy-2-n-octoxybenzophenone — is compatible with polyethylene because of the long n-octyl chain, and it is said to absorb strongly in the 300-375 millimicron UV range.

In field tests made by the producer with 10-mil polyethylene film, it was found that incorporation of 0.171% by weight of the absorber was adequate to retain 85% elongation after two months' use in an area of strong sunlight.

Currently, carbon black is the only effective UV absorber compatible with polyethylene and used to protect the plastic in outdoor service. The new compound is a pale yellow powder and, if proven successful in practical application, will permit the outdoor use of clear and colored polyethylene goods.

New System Developed For Extruding Metallic Sodium in Wire Form

For many reactions, where small amounts of sodium in wire form are required, there has long been a need for equipment capable of producing wire from the standard one-pound cylindrical sodium brick, with minimum loss and effort.

MORE

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July ★ **U.S.I. CHEMICAL NEWS** ★ 1959

CONTINUED *Aerosols*

units. Again, the reported figure is believed to be substantially less than the number of units actually produced. Veterinarian and Pet Products, the other new category on the questionnaire, showed a reported figure of 3 million units. Serious consideration was given by the CSMA committee to the inclusion of food products in the 1958 survey. However, after careful weighing of the various factors involved, it was decided to postpone inclusion until 1959.

U.S.I. Products Used in Aerosols

Two U.S.I. products, ethyl alcohol and polyethylene, have played an important role in the steady growth of the aerosol industry. Anhydrous ethyl alcohol is virtually a universal ingredient in hair sprays, room deodorants, perfumes and colognes, and is widely used in other personal products and in pharmaceuticals now sold in aerosol form. Polyethylene is an important component in packaging, being used for dip tubes and valve parts. U.S.I. provides nationwide distribution of these products, and technical assistance on their use.

Aerosol industry leaders predict a continued rise in the sales curve. One of the largest makers of containers forecast recently that total production of aerosols should reach 555 million units this year.

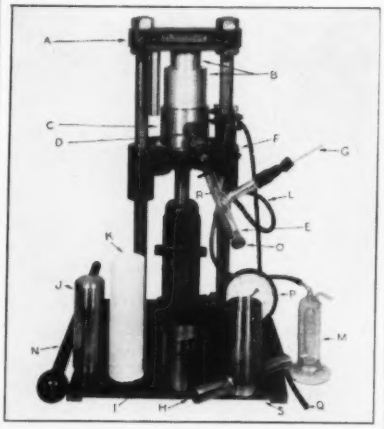
Ethyl Alcohol Permits Two-Color Dyeing Effects On Cotton-Acetate Fabrics

It is reported that in the vat dyeing of cotton-acetate fabrics, ethyl alcohol has been employed to achieve two-color effects by differential swelling of fibers. The fabric is treated at 40°C in a weak alkaline solution containing vat color and 70% ethanol in equal parts.

The acetate fibers are said to take the dye strongly, while the cotton fibers remain practically undyed. Cross-dyed effects can be achieved by dyeing the cotton in a subsequent bath without ethanol. The ethyl alcohol acts by swelling the acetate fibers and depressing any swelling of cotton.

CONTINUED *Sodium Wire*

Researchers at the U.S.I. laboratories in Cincinnati have recently developed such a system, which is described completely in a technical data sheet now available. A photograph of the system, with descriptive legend, appears below. Any laboratory press capable of delivering 10-15,000 psi is suitable.



System for extruding sodium wire: (A) press; (B) body & plunger, 2¼" mold; (C) die assembly; (D) die plate holder & adapter; (E) adapter for cutting sodium wire; (F) clamp; (G) sodium wire cutter; (H) cutter for cleaning oxide layer from feed stock; (I) & (J) bar & knockout rod for pushing plunger from mold body; (K) sodium feed stock; (L) tube for inert gas blanket; (M) bubbler indicating inert gas flow; (N) press oil-pump handle; (O) stopper (when tube not in use); (P) pressure gauge; (Q) inert gas inlet tube; (R) sodium wire.

Sodium wire extruded in this equipment can be used, as an example, for a standard Bouveault-Blanc reduction of diethyl sebacate to decamethylene glycol. In this reaction, carried out with sodium in a considerable excess of absolute ethanol at 85-95°C, the sodium must be added slowly because of its great reactivity with ethanol at the temperatures required. The extruded wire form is ideal for the purpose. Procedure for this reduction is described in detail in the U.S.I. technical data sheet entitled: "Laboratory Production and Use of Sodium Wire," which is obtainable upon request.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U.S.I.

Industrial glycols are treated comprehensively in new 80-page booklet now available. Use as antifreezes, coupling agents, humectants, liquid coolants, resin intermediates, solvents described. Properties, handling included. **No. 1490**

A gas chromatography abstracting service has been formed to keep subscribers up-to-date on current developments. Foreign and U.S. journals are searched and technical papers reviewed. Abstracts are submitted on punched cards. **No. 1491**

N-ethyl- and N-methylmorpholine are now being offered as stabilizers for chlorinated hydrocarbons, catalysts for urethane foams, and to prepare corrosion inhibitors, waxes, all emulsifiers and drugs. **No. 1492**

Newly revised chemical elements wall chart now being sold includes newly adopted symbols such as Ar for argon, Es for einsteinium; technical uses of many elements; latest values for atomic weights and other numerical constants. **No. 1493**

Vitamin B_6 is subject of new 40-page brochure. This condensed, up-to-date report gives nutritional and clinical data, plus a review of the chronology, chemistry, pharmacy and occurrence in nature of the vitamin. **No. 1494**

To study animal behavior in response to stimuli, complete range of automatically-recording test equipment is now on market. Permits evaluating effects of psychotropic agents, tranquilizers, sedatives, stimulants, euphoriants. **No. 1495**

New creams said to protect against virtually any skin irritant commonly encountered in industry have been developed. Contain hexachlorophene for bacteriological, anti-fungus effects. Emollient prevents drying, cracking. **No. 1496**

New first aid aerosol spray is claimed to combine antiseptic, germicide, surface anesthetic, surgical dressing and fungicide, all in the one product. **No. 1497**

Synthetic bergamot oil, believed to be first essential oil ever produced entirely and successfully by chemical means, has been announced. Said to have advantages of low and consistent cost, dependable supply, uniformity, freedom from impurities, improved stability. **No. 1498**

New filter paper now being offered is thin plastic (cellulose ester) with millions of tiny pores. Resistant to heat, chemicals; biologically inert. Said to permit large-scale microfiltration to previously unobtainable standards of cleanliness. **No. 1499**

PRODUCTS OF U.S.I.

Alcohols: Ethyl (pure and all specially denatured formulas); Anhydrous and Regular Proprietary Denatured Alcohol Solvents SOLOX®, FILMEX®, ANSOL® M, ANSOL PR.

Organic Solvents and Intermediates: Normal Butyl Alcohol, Amyl Alcohol, Fusel Oil, Ethyl Acetate, Normal Butyl Acetate, Diethyl Carbonate, DIATOL®, Diethyl Oxalate, Ethyl Ether, Acetone, Acetoacetanilide, Acetoacet-Ortho-Chloranilide, Acetoacet-Ortho-Toluidide, Ethyl Acetoacetate, Ethyl Benzoylacetate, Ethyl Chloroformate, Ethylene, Ethyl Sodium Oxalacetate, Sodium Ethylate, Urethan U.S.P. (Ethyl Carbamate), Riboflavin U.S.P.

Pharmaceutical Products: DL-Methionine, N-Acetyl-DL-Methionine, Urethan USP, Intermediates.

Heavy Chemicals: Anhydrous Ammonia, Ammonium Nitrate, Nitric Acid, Nitrogen Fertilizer Solutions, Phosphatic Fertilizer Solution, Sulfuric Acid, Caustic Soda, Chlorine, Metallic Sodium, Sodium Peroxide.

PETROTHENE® Polyethylene Resins

Animal Feed Products: Antibiotic Feed Supplements, Calcium Pantothenate, Choline Chloride, Special Liquid CURBAY, Menadione (Vitamin K_3), DL-Methionine, MOREA® Premix, Riboflavin Products, U.S.I. Permadry, Vitamin B_{12} Feed Supplements, Vitamin D_3.

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Division of National Distillers and Chemical Corporation
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After Closing

Continental Can Plane Crash Kills Wallace

OF the eight executives of Continental Can Company, New York, who were killed July 1, when a company plane crashed near Marion, O., two were well-known in the chemical specialties industry. John H. Wallace, 47, products sales manager of non-food cans, was active in the affairs of the Chemical Specialties Manufacturing Association, and was a member of the Steering Committee of the Aerosol Market Development and Publicity Committee of CSMA. He attended a meeting of the committee in New York on June 3.

Mr. Wallace had been with Continental Can for 25 years. Before assuming the position in 1956 he held at his death, he had been district sales manager in the Boston area and a metal can salesman in the New York office. A graduate of West Virginia University, he was a native of Wheeling. Mr. Wallace is survived by his wife, two sons and a daughter, residing at R.D. #2, Barnegat Road, Pound Ridge, N.Y.

Abbott W. Sherwood, Jr., 47, who also perished in the crash of the converted two-engine, B-26 Martin bomber, was eastern division sales manager of non-food cans and steel containers. He was appointed to this post in 1956. Previously he had been assistant district sales manager in New York and, prior to that, a salesman in both New York and Houston. A graduate of Phillips Exeter Academy and Harvard, he served in the Air Force as a Lieutenant Colonel in World War II. He is survived by his wife and three children, residing at 99 Bellewood Ave., Dobbs Ferry, N.Y.

The other six Continental executives who died in the crash were connected with the production phase of the business. With Mr. Wallace and Mr. Sherwood, they were returning from a conference in Chicago. Two company pilots also were killed.

The plane was not the converted four-engine B-24 Liberator used by Continental to transport its customers to and from CSMA conventions.

—★—

Bjork Norda Director

H. William Bjork has been elected a director of Norda Essential Oil and Chemical Co., New York, and manager of the firm's customer relations division. He will make his headquarters at Norda's main office at 601 W. 26th St., according to an announcement made by Dr. Herman J. Kohl, chairman of Norda.

Mr. Bjork retired earlier this year from L. Sonneborn Sons, New York, refiners of petroleum chemicals, after 40 years in the cosmetic, pharmaceutical and chemical industries. He was manager of the white oil division of Sonneborn, and continues to act in an advisory capacity for the firm. In addition, he is an officer and director of H. Clay Glover Co., West Hempstead, N. Y., manufacturer of animal remedies, and a partner in Kamen & Co., members of the New York Stock Exchange.

H. William Bjork

Norda manufactures essential oils, aromatic chemicals, perfume bases, and flavors used in the fragrance, chemical specialties, cosmetic, toiletries and food fields.

—★—

Grasselli Name Dropped

Formation of a new corporate "wing", the Industrial and Biochemmicals Department to take over all operations of the Grasselli Chemicals Department was announced recently by E. I. du Pont de Nemours & Co., Wilmington, Del.

Former Grasselli units coming under the new department include all 11 plants in Ohio, Pennsylvania, Michigan, Indiana, New Jersey, Virginia, Kentucky, and Texas.

—★—

P&G Biggest Advertiser

The largest advertiser in major media in 1958 was Procter & Gamble Co., Cincinnati, with an expenditure of $98,592,297, it was reported last month by *Advertising Age*, a trade publication. General Motors Corp., Detroit, was a close second, and Ford Motor Co., Dearborn, Mich., was third.

—★—

Colgate Acquires Sterno

Arrangements were completed last month for the acquisition of Sterno Corp., New York, and its subsidiaries, by Colgate-Palmolive Co., New York. Under terms of the transaction, Colgate will acquire all outstanding shares of Sterno in exchange for Colgate common stock.

Sterno markets "Sterno Canned Heat" fuel as well as a line of stoves, heaters, food warmers, chafing dishes and other appliances utilizing this fuel, for industrial and household use. A metal polish, charcoal lighter, and other

items were recently added to the line. Colgate said that the Sterno line is a logical addition to the products of its associated products department, which handles the company's sales of industrial products to institutional and industrial users. A large part of Sterno's sales are made to the same type of customers.

—★—

New Treplow Plant

Ground breaking ceremonies for the construction of a new detergent intermediate plant in West Paterson, N. J., were held June 29 by Treplow Products, Inc., Paterson. The new plant, to be located on a 30 acre site on Garrett Mountain, is expected to be completed in four to six months. The new facilities are expected to more than triple Treplow's present plant capacity. The firm is a basic producer of alkyl aryl sulfonates, alkyl sulfates, alkanolamides, petroleum sulfonates, exthoxylated sulfates, organic acids and sulfated esters, and has pioneered the sulfur trioxide sulfating/sulfonating process. Planning for greater integration Treplow proposes to offer a wider range of end products.

—★—

New Dewey & Almy Plant

Start-up of a new plant at Owensboro, Ky., to manufacture polyvinyl acetate polymers and copolymers and other specialty chemicals, was announced June 22 in New York by George W. Blackwood, president, Dewey and Almy Chemical Division, W. R. Grace & Co., Cambridge, Mass.

The $4,000,000 facility, Dewey and Almy's 15th plant and its seventh in North America, went on stream in the Dewey and Almy Division's 40th anniversary year and month. The division was incorporated June 12, 1919.

The new plant doubles the division's total capacity to produce polyvinyl acetate emulsions and butadiene styrene latex. Total latex and vinyl emulsion capacity at Owensboro: 20,000,000 lbs./year.

Schram Joins Armour

Marvin Schram recently joined the chemical division of Armour & Co., Chicago, as southeastern sales representative, with headquarters in Charlotte, N.C. He is responsible for sales of fatty nitrogen derivatives in Virginia, North and South Carolina and eastern Tennessee.

Marvin Schram

Before joining Armour, he was with the industrial water conditioning department of E. F. Drew & Co., New York, and earlier had been with Dennis Chemical Co., and Olin-Mathieson Chemical Corp.

—★—

James Hibben Dies

James H. Hibben, 62, chief of the chemical division, United States Tariff Commission, Washington, D. C., died June 15th from the effects of a fall the day before. Dr. Hibben had been chief of the division since 1939.

—★—

Fortune Article on Lever

Some insights into the people and policies at Lever Brothers Co., New York, in the post-Luckman era are contained in an article, "Lever's Artful Dodging," by Spencer Klaw, which appears in the June issue of *Fortune*. Lever's recent successes, sales and profitwise, according to the article, are achieved by not meeting Procter & Gamble head-on in competition.

"We just stopped wearing ourselves out in a frontal battle we could never win, and started going around them," the article quotes William H. Burkhart, Lever chairman, as saying.

According to *Fortune*, Lever earned $10 million on sales of $383 million last year, and since 1949 has more than doubled its sales volume.

Lever's success in the marketing of "Lux" liquid detergent and later "Wisk," as well as "Stripe" toothpaste, is told in the article. Also revealed is how "Wisk" (heavy duty liquid detergent) came into being and how it got its name.

—★—

van Ameringen Speaks

Arnold L. van Ameringen, chairman of International Flavors & Fragrances, Inc., New York, was the principal speaker at a dinner meeting of the California Chapter of the Society of Cosmetic Chemists, held recently in Los Angeles. He spoke on the subject of "The Role of Fragrance in Cosmetic Products."

Dr. Paul Jewel, chief chemist of Max Factor & Co., Hollywood, a former president of the Society and chairman of the program committee, introduced Mr. van Ameringen.

—★—

Kiefer Names Sales Reps.

Karl Kiefer Machine Co., Cincinnati, last month announced the appointments of two sales reprsentatives and an executive in its sales department. David Shields has been named sales representative for New England and part of New York state. Previously he was with the Standard-Knapp division of Emhart Manufacturing Co., Portland, Conn.

Wellington Associates, Phoenixville, Pa., headed by Charles H. Smith, Jr., now represents the company in eastern Pennsylvania, Maryland, Delaware, Virginia, and southern New Jersey.

In Cincinnati, Philip V. V. Hurlburt has been appointed sales executive at the firm's home offices.

Shulton Appointments

James Murphy has been appointed national sales manager of the toiletries division of Shulton, Inc., Clifton, N. J., it was announced last month by Richard N. Parks, vice-president – sales. Previously eastern branch sales manager since 1954, Mr. Murphy is now responsible for all sales to franchised retailers and wholesalers. He has been with the company since 1938.

James Murphy

Also announced were the appointments of Roy Stogner as manager of the newly formed northeast branch, comprising New York and New England, and Stephen Backiel as manager of the new middle Atlantic branch, which includes eight states in that area and Washington, D. C. A product manager since 1956, Mr. Stogner joined Shulton seven years ago.

Roy Stogner

Mr. Backiel has been with the company since 1949 and most recently served as assistant to the sales manager.

Stephen Backill

Bates Soap Corp. Moves

Bates Soap Corp. has moved recently from its former location, 1231 Seneca St. to the Seneca Warehouse, 293 Larkin St., Buffalo 10, N. Y. The move was necessary to obtain additional space to take care of increased sales of "Bates Oven Cleaner", according to Harold R. Bates, president. The oven cleaner is packaged in a polyethylene plastic "squeeze" bottle with a sponge top applicator. Expanded sales of another new Bates product, "Bates Form-coating #2" for concrete forms, also were a factor in the move. Mr. Bates, former president of the Harris Soap Co., Buffalo, N. Y., formed Bates Soap Corp. in 1954.

★

George Degen Co. Moves

George Degen & Co. moved July 1st to larger quarters at 21 West St., New York 6. For the past 11 years, the firm, which specializes in industrial vegetable oils, was located at 111 Broadway, New York 6. The new telephone number is Digby 4-4940. Degen's associated company, Degen Oil & Chemical Co., which has manufacturing facilities for all types of processed oils, vehicles, and specialties, retains its present address at P. O. Box 5 C, Kellogg St., Jersey City 5, N. J.

Monsanto Changes

The appointment of Herbert S. Parham as director of marketing for the organic chemicals division of Monsanto Chemical Co., St. Louis, was announced last month by Robert M. Morris, newly elected vice-president of the company and general manager of the division.

Charles M. Sommer, who was elected executive vice-president, a director and a member of the executive committee of Monsanto on June 15, had been general manager of the organic chemicals division since 1954.

At the same time Monsanto announced that Arthur P. Kroeger was appointed assistant general manager of the division. Mr. Kroeger is former director of marketing.

Mr. Parham joined Monsanto in 1939 after receiving a BS degree in chemical engineering from the University of Missouri. He served in various production and sales capacities before his appointment in 1951 as product sales manager for intermediate chemicals. He was appointed assistant director of sales planning for the division in June 1958.

★

Scholarship Fund Set Up

The establishment of the C. C. Alexander Memorial Scholarship Fund at Purdue University was announced last month by G. R. Ferguson, president of Geigy Agricultural Chemicals division of Geigy Chemical Corp., Ardsley, N. Y. The scholarship is in memory of Claire C. Alexander, research manager at Geigy, who was killed in an airliner accident May 12th (See *Soap and Chemical Specialties*, June 1959, page 163). He was an alumnus of the Purdue Entomology Department, Class of 1938. The scholarship will be the first perpetual fund of its kind at Purdue which will give preference to entomology students. Contributions may be made directly to the Fund, Purdue Alumni Scholarship Foundation, Lafayette, Ind. Ac-

cording to Dr. Ferguson, Geigy has made a major contribution to the fund.

—★—

Hits No Wax Claims

The claim that new car finishes seldom if ever need waxing "constitutes a disservice to" the automobile buyer "and will backlash on those who make it", Dr. J. Vernon Steinle, research and development vice-president of S. C. Johnson & Son, Inc., Racine, Wis., told a Detroit audience recently.

He said that more than three years research by his company has shown that there is a definite need for cleaning, polishing and waxing new automobile surfaces and that surveys have shown that dealers and new car owners are recognizing this despite the claims made by automobile manufacturers.

"Waxing is necessary to protect the new car finishes for the simple reason that they do chalk and dull on exposure," Dr. Steinle said. "The need for waxing is not eliminated. Exposure to sun and humidity, which are the two elements most destructive to car finishes, will continue to have a deleterious effect on the new car finishes, but at a somewhat slower rate."

Dr. Steinle pointed out that there is a "significant difference" between what is said in automobile manufacturers' advertisements and what is recommended in the manuals they furnish new car owners. "For instance", he said, "in the cases of Ford and Chevrolet, both of which advertise that their finishes need little or no wax care, their manuals contain advice that corresponds closely with what car polish manufacturers have recommended for years."

Automobile dealers with whom Johnson representatives had talked were unanimous in agreeing that the car makers had "gone overboard" with their no-waxing claims for their new models, Dr. Steinle said.

Pyrethrum Suit Settled

A settlement has been reached in a suit charging conspiracy for breach of contract in a case involving world-wide distribution of pyrethrum, it was an nounced recently. The actions brought by Mitchell Cotts Group, Ltd., London, against the Pyrethrum Board of Kenya and Societe Co-operative Des Produits Agricoles for conspiracy for breach of contract was settled on the joint defendants agreeing to submit to judgment for damages of £40,000 pounds, plus costs. Announcement of the settlement was made in a press release issued recently by Mitchell Cotts Group.

J. K. Dick, managing director of Mitchell Cotts Group, Ltd., said that his company's purpose in bringing the actions was to establish its right to fulfillment of a commercial contract, freely entered into by a Statutory Board. For this reason, the defendants' admission of liability was of vital importance to his group and was of interest to the whole business community in Kenya, Mr. Dick said.

He added that "our interest in the pyrethrum industry, dating from war years, will continue and we hope expand. In spite of past difficulties we shall go on working for a stable pyrethrum industry for the benefit of all concerned. We are always willing to discuss ways and means with those who have the same idea."

—★—

Brake Fluid Legislation

The sale of hydraulic brake fluid other than heavy duty grade will be a misdemeanor in the State of New York, effective October 1, 1959, according to N.Y. State Senate Bill 602. Labels on brake fluid packages must indicate compliance with the heavy duty specifications.

Registration of brake fluid for a fee of $10.00 annually per brand is required under Alabama Senate Bill 40, effective January 1, 1960. Under this law, the label must bear "an accuraate statement of the net quantity of the contents in terms of liquid measure and the 'Brake Fluid' and 'Heavy Duty'.

—★—

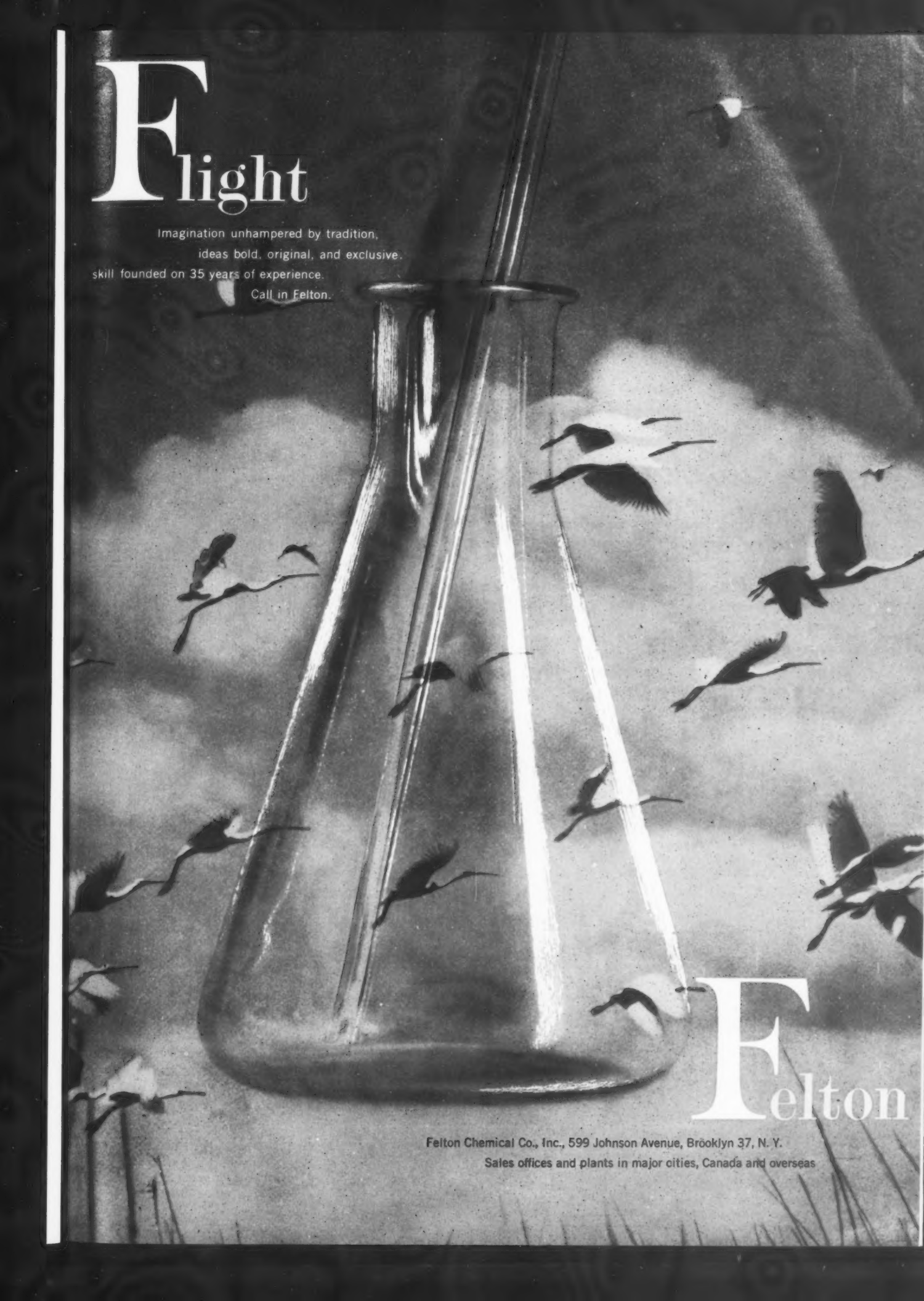
U B S Bought by Staley

U B S Chemical Corp., Cambridge, Mass., has been acquired by A. E. Staley Manufacturing Co., Decatur, Ill., corn and soy bean processor, it was announced early this month. Staley delivered to U B S 102,476 shares of common stock on June 30. These shares will be distributed to U B S stockholders on the basis of one share of Staley common for each one and three quarters shares of common stock of U B S. Current plans call for U. B. S to operate autonomously.

—★—

Completes World Wide Trip

George V. Branigan, vice-president of Ungerer & Co., New York, recently completed an around the world tour visiting raw materials producers and suppliers in the Orient, Middle East, and Europe. Travelling west to east from New York, Mr. Branigan first visited Jack Slais, Ungerer branch manager in Chicago and then went on to call on suppliers and principals in Oregon and Washington. He left for the Orient from Alaska and gathered information about natural oils and synthetic aromatics production while visiting Japan. Future markets and sources of supply were subjects he discussed with shippers in Formosa, Indonesia, Malaya, and other Far East countries. Next stop was in India and then on to Beirut and Damascus where Mr. Branigan discussed natural gums and essential oils. He investigated the citrus oil situation during stop-overs in Italy. In France he called on Rene Bernard, manager of the Ungerer-Vidal Charvet offices and made contacts with customers and suppliers of natural oils and raw materials for perfumery. Before leaving for the United States via Iceland, Mr. Branigan went to London where he discussed plans for a new branch office there.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Imagination unhampered by tradition,
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skill founded on 35 years of experience.
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Sales offices and plants in major cities, Canada and overseas

Nine

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make life easier for you!

You choose the one that offers the greatest efficiency and economy in *your* process. P_2O_5 contents range from 61.5% to 67%, pH from 6.7 to 9.0.

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With integrated production coast-to-coast, we can assure fast delivery and ample supply. Our nearest office will gladly send you samples and quote.

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Previous methods of compromise caused by changes in reformulation, are no longer necessary to obtain complete solubility and compatibility.

The methods used which are the basis for THE VERLEY PROCESS, are best illustrated by a comparison of samples.

We will be pleased to tell you how to enjoy the benefits to your product by use of THE VERLEY PROCESS, upon request.

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☐ 7. **Modern Chemical Specialties,** by Milton Lesser. 514 pages, 22 illus. Covers formulation, properties and uses of some fifty types of household, industrial and automotive chemical specialties. Price: $7.25.

☐ 8. **Handbook of Cosmetic Materials,** by Greenberg-Lester. 467 pages. Covers the properties, uses and toxic and dermatological actions of over 1,000 materials selected in response to a questionnaire sent to cosmetic manufacturers. Includes a chapter on the skin by Howard W. Haggard, Director, Applied Physiology Laboratory, Yale University. Price: $13.50

☐ 9. **Soap Manufacture,** by Davidson et al, in two volumes. Volume I: 537 pages, 66 illus., 118 tables. Covers the history of the soap industry, theoretical principles of soap manufacture, raw materials of soap manufacture and the fatty raw materials. Price: $13.50. (Volume II in preparation)

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☐ 11. **Industrial Oil and Fat Products,** by Alton E. Bailey. 991 pages, 164 illus. 133 tables. Covers the nature of fats and oils, their composition and structure; raw materials; industrial utilization. Price: $18.00.

☐ 12. **Fatty Acids,** by Klare S. Markley. 678 pages, 81 illus., 163 tables. The chemistry and physical properties of fats and waxes. Price: $14.50.

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The problem, several years ago, was simply oleic acid rancidity. The firm tried another oleic acid.
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Finally, Emersol 233 LL Elaine.
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So they switched to buying Emersol 233 exclusively. And, their subsequent checks on a host of competitive oleic acids have borne out their earlier judgment —Emersol 233, with a polyunsaturate content of less than 5%, has far greater resistance to rancidity than any other oleic on the market.

The other superior qualities of Emersol 233 were incidental to this company. But if your particular oleic acid problems involve color, color stability, or purity, you too are very likely to find the answer in the across-the-board top quality specifications of Emersol 233 LL Elaine. And it costs not a penny more than competitive grades. Write Dept. S-7 for an evaluation sample or a 20-page comprehensive booklet on oleic acids.

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Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio
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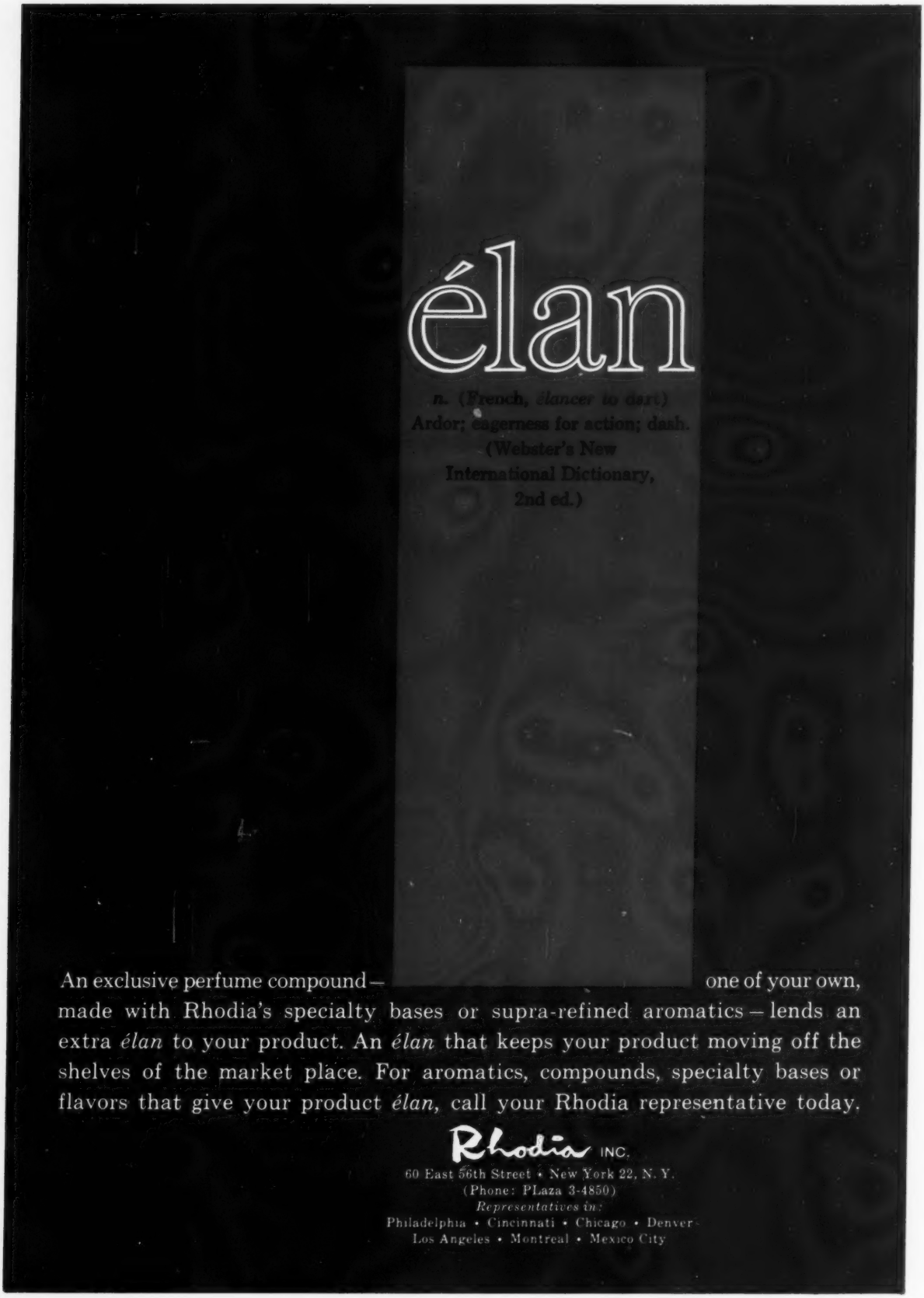
Export Department, Cincinnati


élan
n. (French, élancer to dart)
Ardor; eagerness for action; dash.
(Webster's New
International Dictionary,
2nd ed.)
An exclusive perfume compound – one of your own, made with Rhodia's specialty bases or supra-refined aromatics – lends an extra *élan* to your product. An *élan* that keeps your product moving off the shelves of the market place. For aromatics, compounds, specialty bases or flavors that give your product *élan*, call your Rhodia representative today.
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When it comes to Basic Chemicals for SOAP and DETERGENTS

...come to General Chemical!

There are good basic reasons for making General Chemical your source of supply for basic chemicals. Our large-scale production is one. Long experience is another. And there are many more—including consistent high quality and uniformity of product... top-notch technical service... a coast-to-coast network of plants and distribution points... plus efficient follow-through from order to delivery and beyond that to satisfactory performance. That's why—when it comes to basic chemicals—it's wise to come to General Chemical for all these products....

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- Sodium Silicate, Solutions
- Sodium Metasilicate, Anhydrous and Crystal
- Sodium Sulfate, Anhydrous
- Aluminum Sulfate
- Aluminum Chloride, Solution
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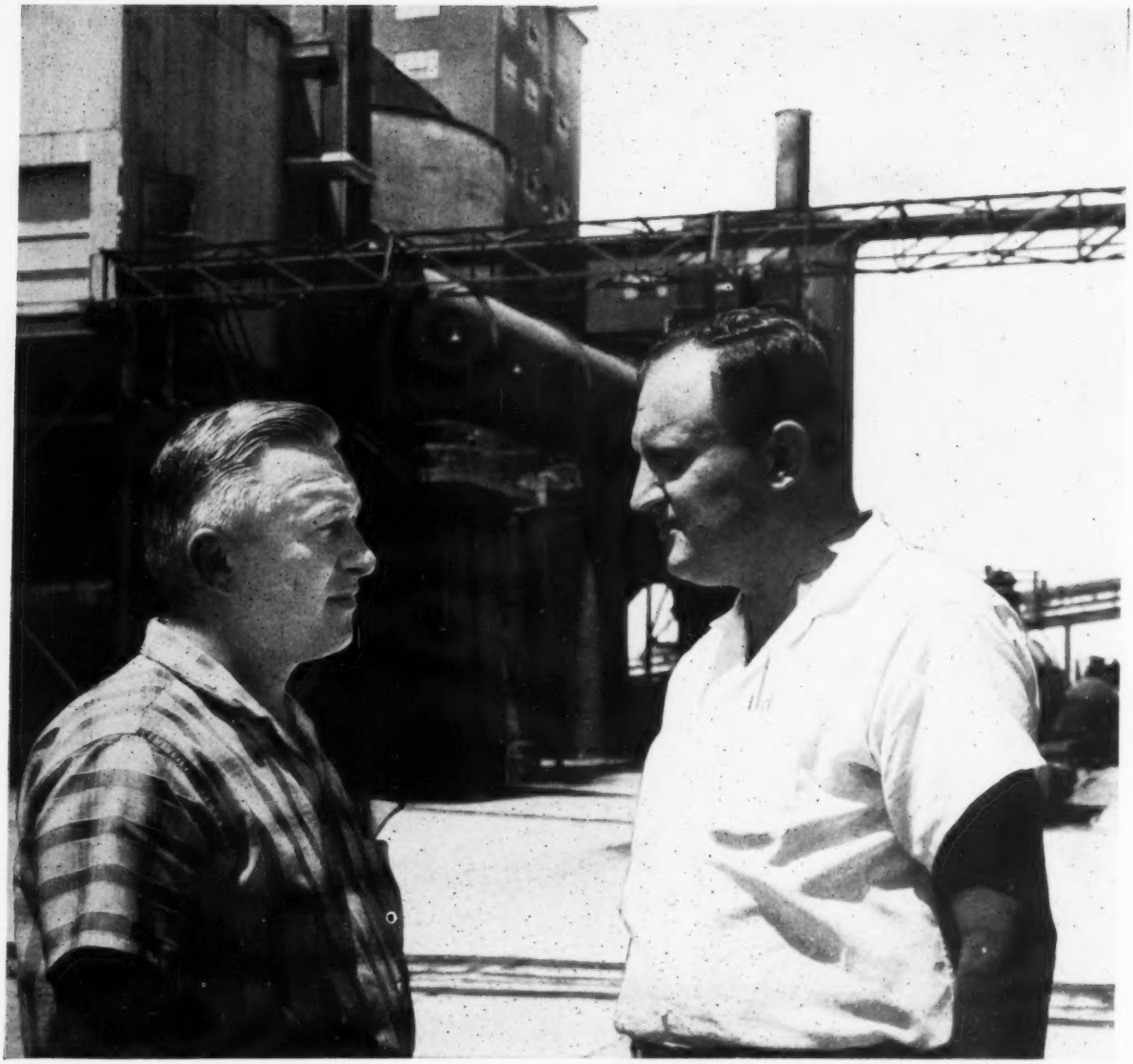

Phosphate Rock calcining sector—at Blockson's 1000 acre Joliet plant.

MEN OF BLOCKSON

Blockson men have the habit of plain talk. This habit pays off for you whenever you phone in an order for phosphates or other Blockson chemicals. The Blockson man gives you your routing and shipping date *while you're on the phone.* He's right in the plant where the chemicals are, so your order starts moving the moment you hang up. Same plain-talk service if you call to change or re-route an order. (Would you like a copy of our latest catalog?)

OLIN MATHIESON CHEMICAL CORPORATION — BLOCKSON

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there's extra value
at no extra cost in

Nacconol® Detergents

available in a form
that fits your needs!

Here are two measurable extra benefits you get when you specify NACCONOL:

1. You're *sure* of getting *full value* in every shipment . . . always the same working effectiveness in your finished product.
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Free-Flowing. Because of their high air content, spray-dried phosphates are always loose.

They dissolve fast, too—two or three times faster than common forms. And they are 97% to 99% pure, meeting the highest standards anywhere.

Two to choose from. Hooker makes two spray-dried phosphates—sodium tripolyphosphate and tetrasodium pyrophosphate. Both are sold under the brand name SHEA.®

For more information on how to make better detergents by using these phosphates, write to the address below.

You can get the following in regular density: disodium phosphate, trisodium phosphate, sodium hexametaphosphate, and sodium tripolyphosphate.

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No other supplier has had such long experience in working with as wide a range of natural products as Penick. You can profit by this experience three ways.

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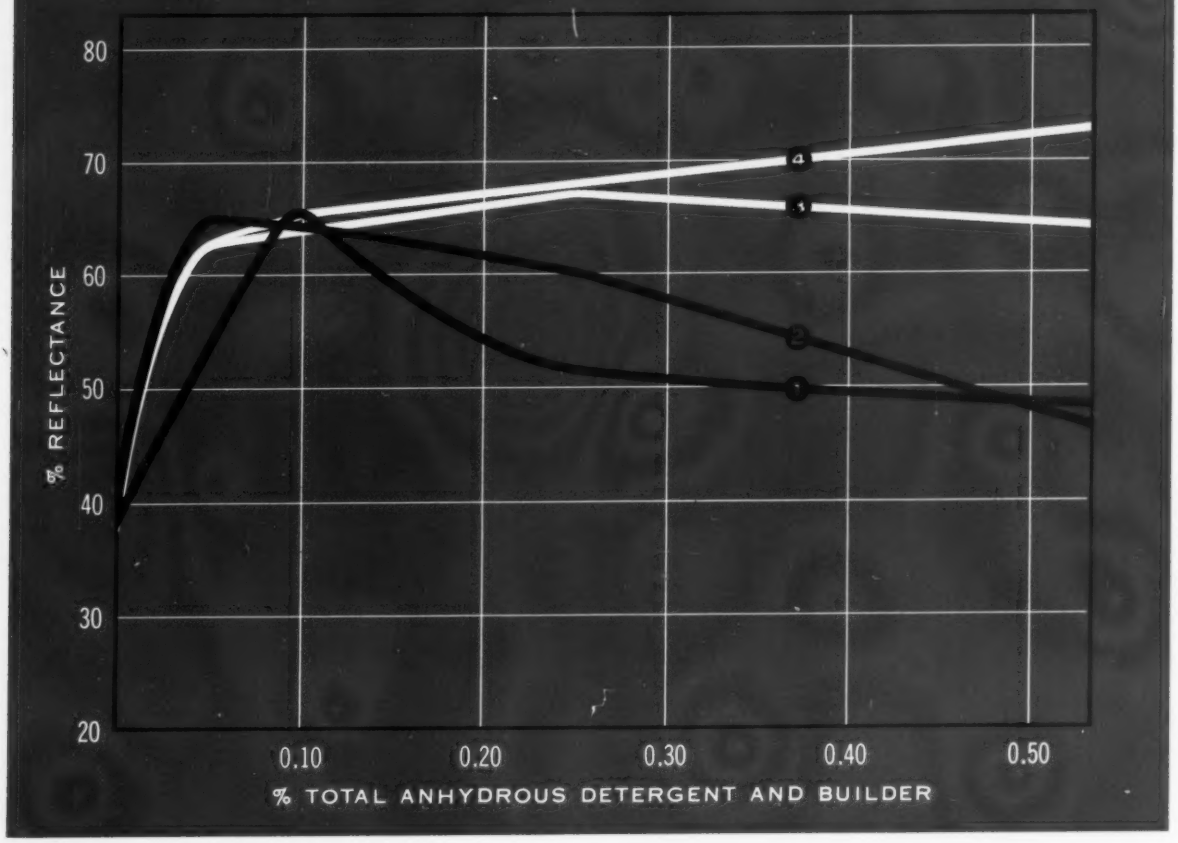
PREVENTION OF DEPOSITION
with PQ Silicates soil stays out



Prevention of deposition of ilmenite on cotton cloth at 60° C.

1. 60% dodecyl benzene sodium sulphonate; 40% sodium sulphate
2. pure synthetic detergent
3. 60% synthetic; 40% Metso Granular, sodium metasilicate pentahydrate
4. 60% synthetic; 40% C sodium silicate (ratio $\%Na_2O:\%SiO_2$, 1:2.0)

More soil is removed when you build your detergent with a soluble silicate. Just as important is silicate's detergent action in keeping the soil from redepositing on the cloth.

Using one of the standard methods for determining the prevention of deposition, the use of sodium silicate builders as shown gives much better protection on cotton cloth over a wide range of concentration than alkyl aryl sulfonate without the silicate.

PQ silicates are complete builders for your household and industrial detergent products. They perform efficiently and economically in all five functions—emulsification, saponification, deflocculation, suspension of soil as well as prevention of redeposition.

Our technicians will be pleased to discuss how to increase the silicate solids in your formulations at reduced cost.

PQ SOLUBLE SILICATES

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Associates: *Philadelphia Quartz Co. of Calif. Berkeley & Los Angeles, Calif., Tacoma, Wash.; National Silicates Limited, Toronto, Canada*

Distributors in over 65 cities

TRADEMARKS REG. U.S. PAT. OFF.

PQ PLANTS: ANDERSON, IND.; BALTIMORE, MD.; BUFFALO, N. Y.; CHESTER, PA.; JEFFERSONVILLE, IND.; KANSAS CITY, KANS.; RAHWAY, N. J.; ST. LOUIS, MO.; UTICA, ILL.

. . . in brief

as the editor sees it . . .

AUTO WAX . . . The research director for one of our largest wax manufacturers recently stated that three years of testing show that the finish on new model automobiles definitely requires cleaning and waxing. He also pointed out that in spite of the advertising claims of the car manufacturers that waxing is not needed, the same manufacturers recommend in their owners' booklets that cars be cleaned and waxed to preserve the finish.

Just about everybody is familiar with automobile advertising, with the gross exaggeration which has characterized it for years, with one company outdoing another with absurd claims. We feel that this no-wax claim falls right into the general pattern of such advertising. Obviously, the new finishes are superior, harder, tougher, more durable. But that hardly makes them scratch and mar proof any more than vinyl tile flooring. The automobile advertising claims are obviously without foundation in fact.

We would like to see a real blast come forth from the Wax Division of CSMA. With research to back up waxing claims, we don't believe the automobile people have a leg to stand on.

* * * * *

SURVEYS . . . . Rumblings of discontent with product surveys conducted each year by the Chemical Specialties Manufacturers Association have of late come forth as open criticism. That there is much to be desired in the surveys on aerosols, floor waxes and insecticides seems to be the chief point of the critics. The surveys on brake fluids and antifreeze compounds appear to have been received generally with approval.

At a recent meeting where one of the surveys was a subject of rather hot discussion, it was suggested that the time had arrived "to survey all surveys" and find out just how helpful they really are to the industry groups involved. Much was made of the fact that some leading manufacturers will contribute their figures one year and refuse to do so the next, that the surveys are more educated guesses than actual figures, that the surveys are incomplete and as such generally misleading.

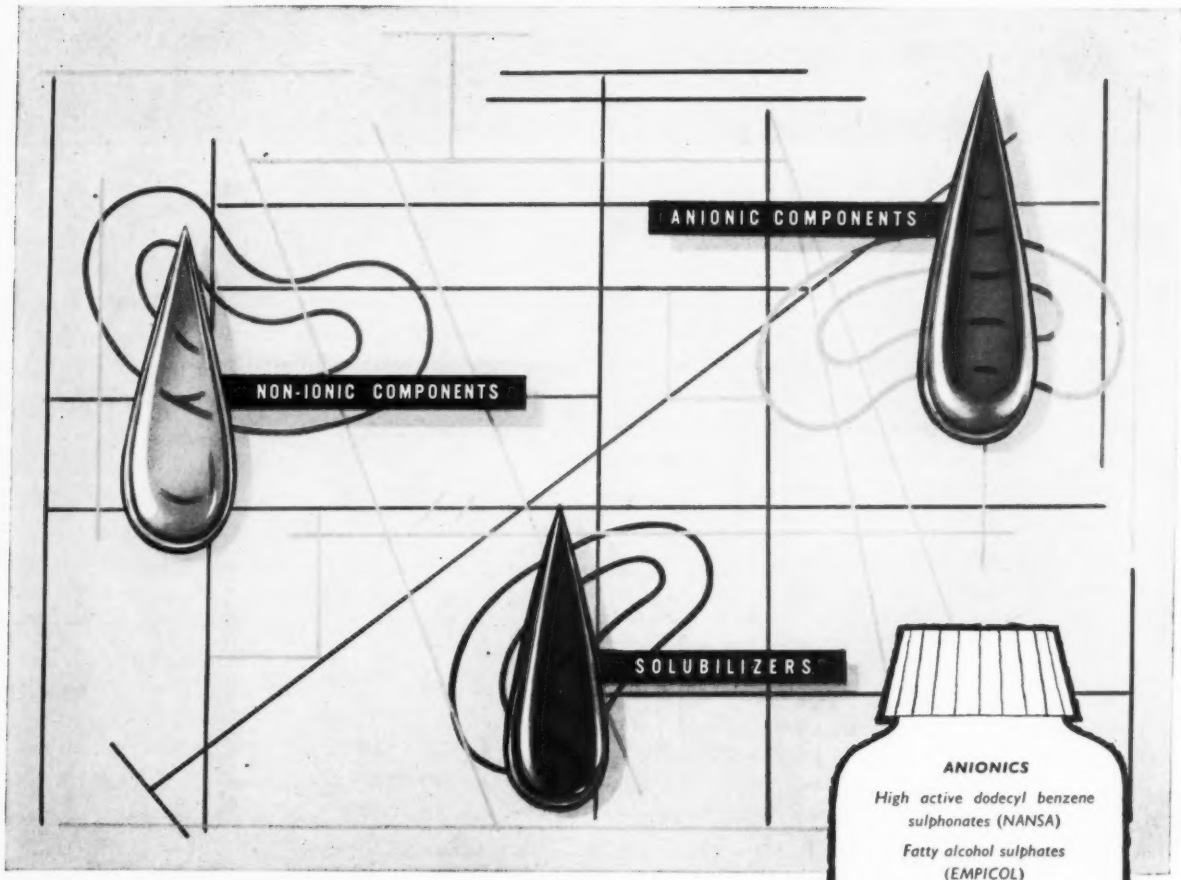
Knowing the great amount of work which is put into these surveys by committee members and CSMA personnel, it is difficult to be coldly critical. But the fact remains that there are some members of the association and of the industry who feel that the surveys are not only a waste of time, but may be dangerously misleading. They may be supplying a warped picture. So before another year rolls around, we feel that a "survey of all surveys" by CSMA might well be in order.

* * * * *

DEMONSTRATOR . . . . Recently our roving reporter bought a package of a well-known moth product at a leading department store. The saleswoman was obviously a demonstrator for the manufacturer. She was far too intelligent and too well informed to be an ordinary run-of-the-mine department store sales person. In a few terse words, she explained the character of the product, dropped in a phrase or two about the integrity of the firm making the product and how long they had been in business. And then she insisted upon a quick demonstration of the product which was an aerosol.

The insistence of the saleswoman that she demonstrate the item was in spite of our reporter's statement that she was quite familiar with aerosols and knew how to use them. Too many people misuse aerosols, she stated, squirt themselves in the face, even fail to remove the cap, return the goods with complaints, are a

Anionics **Non-Ionics** **Solubilizers**



for competitive LIQUID detergents

For dishes . . . fine fabrics . . . hard-surface cleaning . . . the increased popularity of liquid detergents has led to keen competition, with selective formulation a key factor in winning consumer approval.

The Marchon range of components for 'liquids' gives you the choice of many formulations, each with distinct advantages in a particular field, one or more meeting *all* your requirements. Please write for technical data, with formulation advice if required.

ANIONICS

High active dodecyl benzene sulphonates (NANSA)

Fatty alcohol sulphates (EMPICOL)

Fatty alcohol ether sulphates (EMPICOL)

NON-IONICS

Fatty acid mono—and dialkylolamides (EMPILAN)

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Other ethylene oxide derivatives

SOLUBILIZERS

Substituted aromatic sulphonates (sodium and potassium xylene and toluene sulphonates) (ELTESOL)

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U.S. AGENTS:

Aceto Chemical Co., Inc., 40-40 Lawrence Street, Flushing 54, New York. Telephone: INdependence 1-4100.

CANADIAN AGENTS: Messrs. W. J. Michaud Co., Ltd. Suite 905, 321, Bloor Street East, Toronto, 5.

and 4795, St. Catherine Street West, Westmount, Montreal, 6.

Marchon PRODUCTS LIMITED

Marchon's products include basic raw materials and additives for every form of domestic and industrial detergent.

MAR. 11183

59

headache to the stores. The demonstration is a sort of insurance against such unnecessarily returned merchandise.

Going on the basis that most purchasers of household items must be considered as morons until proved otherwise, this demonstration is obviously a good idea backed by much experience. We feel that too many manufacturers believe that everybody is familiar with their products, knows how to use them or will read the label. In our book, they're all wet. We believe that the unjustified return of much merchandise supports our contention. Given half a chance, the public will misuse anything.

* * * * *

TOILET SOAP . . . . In an article about Lever Brothers Co. in June *Fortune*, Bill Burkhart, Lever head man, was quoted as expressing the opinion that people today are just about as clean as they're going to get. In other words, they're not going to use any more toilet soap.

Well, we don't agree. We believe that people are going to get cleaner as time goes on and that lots of people who never were very clean will start to get cleaner. Health and cleanliness education will help turn the trick. In fact, we believe that there are still millions of people in the U. S. who have never used toilet soap, but in the years ahead will start to use it, economic conditions permitting. Over the past three decades, toilet soap consumption has steadily increased, — up one year, down the next, but on a long range basis ever creeping upward.

For years, toilet soap was considered a luxury. Today it is not, — and is priced within the reach of all. So whether it's soap or a synthetic bar, we feel it makes no difference. Its use is bound to grow as improved living conditions spread. So here we are again finding ourselves disagreeing with top authority.

* * * * *

PACKAGING . . . . The whirl of new packages and packaging ideas of late has left us a trifle dizzy. Today, everything seems to be the package. To hell with the product. Put it in a flip-top box with a red label which screams for attention and the morons who frequent our food chain stores will break a leg to buy the stuff. Half or more of the value of the item may be represented by package cost. But who cares? The package designers, the psychologists, the survey boys and the merchandising fellows are all nuts about the package. Whether the product will wash clothes or kill bugs is left to that poor slob buried in the laboratory out in Rahway or Dubuque.

Sometimes, we sort of get the idea that the world of retail products has become a bit more than package conscious. We wonder if it hasn't gone a trifle nuts on the subject. There are times when we wish we could go back to the cracker-barrel days and start all over. Especially when we get hold of a product which requires a wrench to remove the cap or an aerosol that refuses to squirt. And these packaging fellows talk a language which is far beyond our ken. We wonder if they're as smart as they seem to be. Maybe they are, but some of them make awful dumb mistakes. And as we said, it all makes us a bit dizzy.

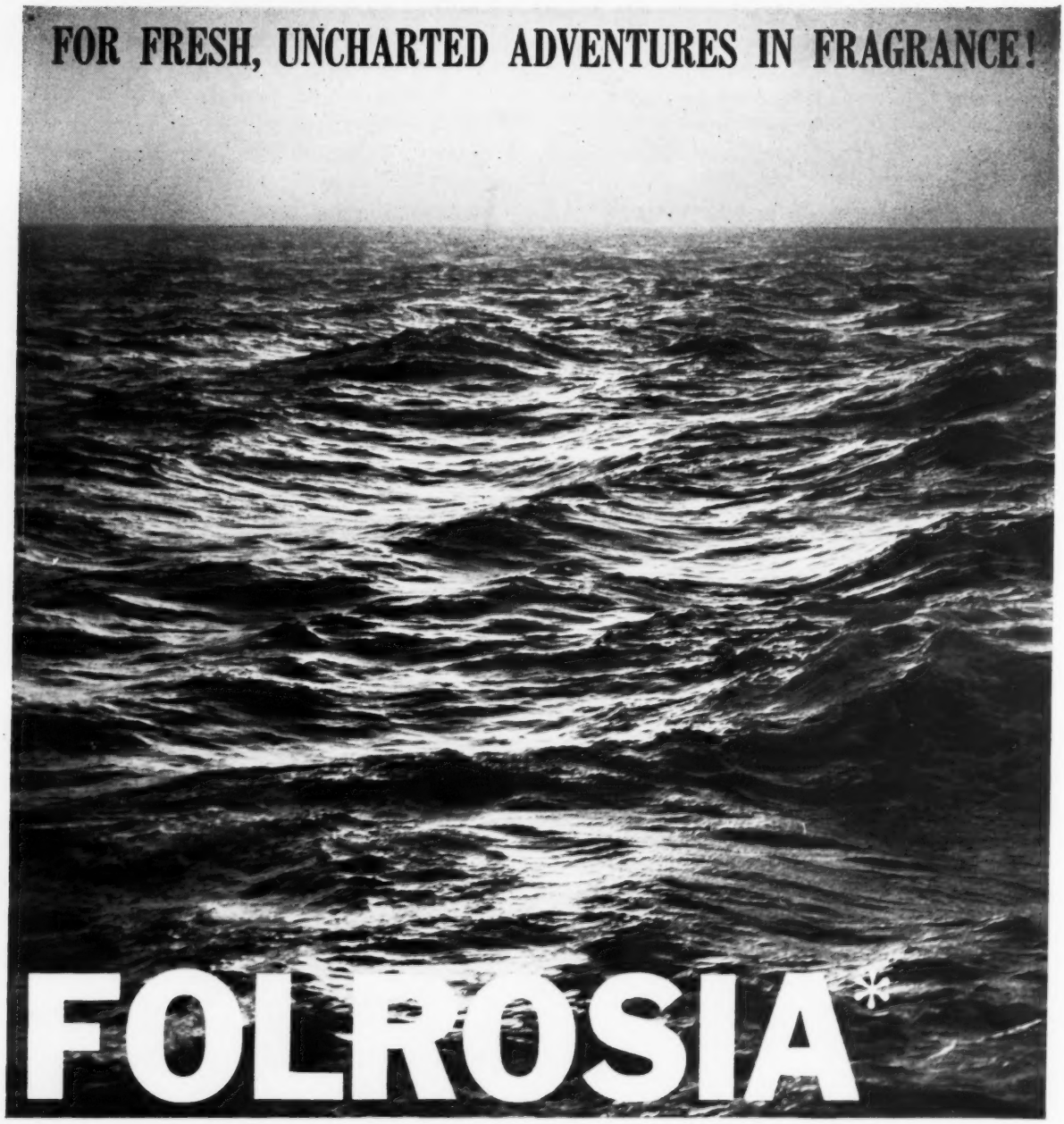
* * * * *

ANTI-FREEZE . . . . Increasing numbers of motorists last year bought their anti-freeze at supermarkets, hardware stores, drug stores and discount houses. And did their own installing. This has led a leading producer and marketer of anti-freeze to cut prices on stuff sold in the can by about 25 per cent. They apparently figure that next winter the supermarkets, auto supply stores, *et al*, will get the lion's share of the business at the expense of the service stations and garages. And they are repricing their lines accordingly for the do-it-yourself motorist.

Off-hand, we are inclined to believe that encouragement of do-it-yourself application of anti-freeze could be a mistake. Errors could be costly. We have a hunch that it is better to let the service station operator, dumb as he is, make the extra four-bits. Failures because of improper use will reflect on the product. They always do. If the motorist's car freezes up come next January, the anti-freeze is *per se* no good. The fact that he did not use enough or what he did use leaked out, is a mere side issue.

The privilege of any marketer to cut his prices as he sees fit is still enjoyed in this great land of the free. But in this case we feel that the reasons given are a bit nebulous and might well backfire.

FOR FRESH, UNCHARTED ADVENTURES IN FRAGRANCE!



...a new, "broad-spectrum" synthetic aromatic with a *deep red rose* character. Use it to create a crisp, natural, leafy rose aura . . . or to lend intensity and personality to subtler blends.

FOLROSIA blossoms with new levels of floral realism! Whether you wish to enhance familiar rose materials, create bold new rose accents of uncommon floralcy and naturalness, or add fresh, lifelike notes to more subtle compositions, FOLROSIA provides a simple, yet unusual answer.

FOLROSIA possesses remarkable tenacity, with a fragrance and nuances reminiscent of fresh green rose foliage. It is extraordinarily stable in soaps, detergents, cosmetic preparations, and its odor effectiveness remains at a high level over extended periods. Write for samples and technical data.

*Trade-mark

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
321 West 44th Street
New York 36, N.Y.

as the reader sees it . . .

Scotland Will Help

Editor:

We are taking the liberty of writing to you in the belief that you may be interested to know of the services we offer to American companies, contemplating either entering for the first time, or expanding existing interest in, the European market.

The Scottish Council is an organization supported mainly by Scottish industry, our object being to promote industrial expansion. As such, all our services are freely offered and we have already given considerable assistance to many of the well-known American companies who are now operating here.

Scotland has many features to recommend it for a manufacturing location including a ready supply of graduates from our four major universities, and also excellent transport and shipping facilities to cater to the British Commonwealth and European markets.

Our services include supplying all preliminary information which may be required in considering a Scottish based manufacturing operation, including labor and raw material costs, site availability and building costs, rental and amortization facilities, and in fact, all the information which will allow a preliminary assessment to be made of the possibilities of a location here without the necessity of sending representatives to study the situation. Itineraries for later visits can be arranged and introductions effected with appropriate Government departments and others.

Our services do not stop at merely supplying basic information and our technical departments are always ready to help manufacturers with their problems, and our trade division with export and marketing difficulties.

If, at any time your readers are interested in making use of our services we would be very pleased to hear from them, and hope they will send us a detailed list of their requirements.

L. B. Aitken,
Chemical Executive,
The Scottish Council
1 Castle Street
Edinburgh 2,
Scotland

—★—

Blockson Omission

Editor:

We are certainly disappointed to note that the name of Blockson Chemical Co. has been omitted as a supplier of a number of chemicals in the listings of the 1959 edition of the *Soap Blue Book*.

Blockson, which is now a division of Olin Mathieson Chemical Corp., is an important manufacturer of the following chemicals:

Trisodium phosphate
Disodium phosphate
Monosodium phosphate
Sodium hexametaphosphate
Sodium acid pyrophosphate
Tetrasodium pyrophosphate
Sodium tripolyphosphate
Tetrapotassium pyrophosphate
Sodium fluoride
Sodium silicofluoride
"Teox 120" (nonionic surfactant)
"C-33" sequestering agent
Sulfuric acid
Hydrofluoric acid

These omissions are causing us a great deal of inconvenience.

Please be sure to include the Blockson name in listings covering the above materials in the 1960 edition of the Blue Book.

William Block,
Blockson Chemical Co.,
Division of Olin Mathieson Chemical Corp.,
Joliet, Ill.

We sincerely regret having left out the Blockson name from the lists in which they rightfully belong. We assure Mr. Block that Blockson will be back in the same old listings in 1960. Ed.

—★—

Likes Italy Best

Editor:

I got quite a kick out of the "Tale Ends" item in the May issue of *SOAP & CHEMICAL SPECIALTIES* dealing with our recent month's visit to Italy. As to why we spent the entire time in Italy, this may answer you:

1.) We (Mrs. Fuld and my-

(*Turn to Page* 170)

Fred Koch, formerly New York branch manager of Dow Chemical Co., Midland, Mich., and now a consultant for the firm, recently was presented with his 40 year service pin by Lee Doan, president of Dow.

Kyro EO A neutral nonionic synthetic detergent of the 100% alkyl-phenol ethylene oxide condensate type. A light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer detergents, self emulsifying solvents, laundry detergents, glass, textile and dairy cleaners, insecticides, and bottle washing compounds.

AMBER GRANULES A neutral 88%, 42° titer-type soap of exceptional purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the preparation of hand cleaners, paste cleaners, polishes, lubricants and coatings.

WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste and liquid shampoos, bubble baths, liquid detergents, liquid car washes, liquid floor cleaners, insecticides, glass cleaners, rug and upholstery cleaners.

SEVEN SIGNPOSTS

to successful formulation from Procter & Gamble

ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified alkyl sulphate. Offers exceptional efficiency and stability over a wide range of operating conditions. Wetting, penetrating, sudsing, dispersing and emulsifying properties make it excellent for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

IVORY BEADS A medium titer, neutral white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, dishwashing compounds and paper coatings.

AB GRANULES A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulphonate type. A white product that can be used effectively in the blending of bubble baths, car washes, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.

Procter & Gamble's Products Research Department will gladly supply you with information on how you can save time and money when you formulate with Procter & Gamble products. You can also get technical help in connection with their use by writing to:

K LIQUID. A modified, highly concentrated ammonium lauryl sulphate—modified for increased sudsing and mildness. Exceptionally low cloud and pour points. Highly fluid and easy to handle. Ideal for clear liquid shampoos and liquid detergents where high foaming is required.

Procter & Gamble

BULK SOAP SALES DEPARTMENT
P. O. BOX 599
CINCINNATI 1, OHIO

Detergents . . . Cleansers . . . Soaps . . .

Aerosols
Detergents
Dishwashing Compounds
Floor scrubs
Glycerine
Hand cleaners
Laundry soaps
Liquid soaps
Metal cleaners
Potash soaps
Scouring cleansers
Shampoos
Shave products
Soap powders
Starch
Steam cleaners
Medicinal soaps
Textile detergents
Toiletries
Toilet soaps
and other detergent
and soap products

Charles S. Stephens of American Can Co. looks over the growing number of liquid synthetic detergents packed in cans. Last year his firm made cans for 114 labels, up from 15 in 1955. Story of liquid detergent growth on page 45.

WE'RE ADVERTISING...

Formulators in the know, choose from Ultra's outstanding range of drum-dried detergents. Ultra's exacting quality control guarantees uniform detergents that can't be beaten for color, particle size, lack of dust or odor. You also benefit from the high detergency and excellent wetting properties of these products. And if you're looking for extra-quick cold-water solubility, Ultra has the answer with 39-41% activity Sulframin® ABY or 80-85% activity Sulframin ABS.

Ultra drum-dried detergents are available in convenient 5-ply, multiwall, asphalt barrier bags. Or, if you prefer, they can be supplied in new plastic wax-lined drums.

Whichever way you take delivery, you will enjoy working with Ultra's quality-controlled, drum-dried detergents. Write or call Ultra's Director of Technical Service for **specific** thoughts on your formulation ideas.

ULTRA CHEMICAL WORKS, Inc.
Division of Witco Chemical Company, Inc.
2 Wood Street, Paterson, N. J.

Surging liquid detergents move on to grocers' shelves in increasing numbers and take over better shelf spots. Note plastic bottles for "Joy" and "Swan." Every weapon, including packaging is going into this struggle for market supremacy.

Liquid Detergent Sales Soar

A SOAP industry sales executive confided to us recently that he had heard a rumor that P&G was going to bring out "Tide" in liquid form.

"It scared hell out of us", said this executive.

With liquid detergent sales booming and with no one product having the terrific lead in the field that "Tide" has among powdered detergents such a step would probably have the same effect on a lot of other soap and detergent marketers as well. One reason being, of course, that the "Tide" name is the best known in the detergent field. "Tide" powdered detergent sales of between 18 and 19 million cases a year account for probably 48 per cent of all powdered detergents and roughly 25 per cent of the total liquid and powdered detergent sales in the U.S.

According to the June issue of *Fortune*, in an article on Lever Brothers Co. ("Lever's Artful Dodging"), "Lux" liquid and "Wisk", a heavy duty liquid, are outselling Procter & Gamble's "Joy" and "Ivory" liquid by about five to three. Although "Lux" is generally conceded to be the largest selling liquid detergent of the light duty variety, "Joy" is reported coming up fast and some surveys indicate it is about three tenths of a percentage point ahead of "Lux.". "Ivory", too, is feeling the effects of heavy advertising and promotion, and sales of this product are showing a healthy increase. "Ivory", incidentally, has been on the market about a year. Lever's other entry, and the only heavy

As sales of liquid detergents approach 25 per cent of total market, the battle waxes hotter. Private brands a threat.

duty liquid being sold nationally, has copped slightly better than four and one-half percent of the total market for liquid and powdered detergents. However, knowlegeable detergent marketers indicate "Wisk" sales are "plateauing" at this figure. Nielsen figures indicate combined sales of "Wisk" and "Lux" liquid are roughly 8.8, as against 7.9 for the team of "Joy" and "Ivory".

Off to a shaky and certainly unimpressive start just after the end of World War II, liquid detergents were plagued by a number of difficulties, as is any new product, but in the case of liquid detergents, more so. Finding the most suitable type of packaging and packaging sizes were headaches. Early packages, which made absolutely no sales headway with the housewife, ranged from two to four fluid ounces. Stacked up against economy, giant economy and even "king" sized packages, and selling at the same retail prices, diminutive liquid detergent bottles of the middle and late 1940's gathered dust. (See "The Story of 'Glim' " *Soap & Chemical Specialties,* December, 1955.)

Today the story is different. In fact, the growth of liquid synthetic detergents in the past five or six years could be termed spectacular. This year, according to American Can Company, liquid detergents are in for their best year in history.

"This industry will use about 500 million containers (glass, metal and even plastic) for light duty detergents alone, compared with about 400 million in 1958," says Charles S. Stephens, a sales executive in the Canco division of American Can.

"However," Mr. Stephens says, "there are unmistakable signs that heavy duty detergents will provide the industry with its biggest growth item. Growing consumer acceptance and improved formulations of this product could result in the sale of heavy duty detergents exceeding that of light-duty detergents in the years immediately ahead."

Another interesting statistic Mr. Stephens came up with is that his company now makes its "Non-Drip" detergent can for about 200 different labels in the 12, 16, 22, 32-ounce and half gallon sizes. "This, too, is indicative of the industry's growth," he said, noting that, "we made cans for 114 labels in 1958 and for only 15 labels in 1955."

Canco's 12-ounce can is the "most popular for light-duty detergents," Mr. Stephens said. He predicted that the trend in the heavy duty field will be to larger size containers because of greater product use per application.

"A housewife uses only a capful or so of the light-duty detergent for doing her dishes, but may use as much as half a cup per application for cleaning purposes with the heavy-duty detergent," he pointed out.

For Mr. Stephens, there is "romance" in the story of the growth of liquid detergents. One could hardly expect a metal container maker to feel otherwise, particularly when the music for this affair between the can companies and the detergent marketers has been accompanied by the sweet music of tinkling cash registers in grocery stores throughout America. Romance, indeed, for six years ago liquid detergent can sales were zero; this year they'll be close to 500,000,000, and by sometime early in the 1960's *one billion.*

The affection of the housewife for using a liquid washing product in her sink or washing machine grows with the passing of the years. The latest figures of the Association of American Soap & Glycerine Producers give every indication of the veracity of this statement. The latest statistics—those for the first quarter of 1959—show liquid detergent sales up 14.2 percent over the first three months of 1958, and ahead of the last quarter of 1959 by 13.2 per cent.

In terms of tonnage, the Soap Association reported that packaged liquid detergent sales in the first quarter of this year were 12,631,000 gallons, up from 10,465,000 gallons in the corresponding period a year earlier. For all of 1958, sales of packaged liqcuid detergents ran to 46,086,000 gallons, as compared with 36,800,000 gallons in 1957.

If the reader is so minded, he can add in two sets of figures reported in the Soap Association census for "liquid detergents, other than shampoo, bulk." In 1958 bulk liquid detergent sales totaled 6,156,000 gallons, *down* surprisingly from 7,718,000 gallons reported by member companies in 1957.

Presently, it looks as though

History of the packaging of one prominent liquid detergent, "Glim," is neatly summarized in this photo, reading from left to right.

liquid synthetic detergents of both the light and heavy duty type account for approximately 20 per cent of all soaps and detergents (both powdered and liquid) sold at retail. At the current rate of expansion this figure might move up to 25 per cent by the year's end.

That others outside the soap and detergent marketing fraternity are not unaware of this revolution within a revolution that has been taking place is becoming increasingly evident. The "outsiders", in this case the chain grocery store operators, and we use the word "operators" advisedly, are intensifying their efforts to cash in on the liquid bonanza. The dreaded phrase "private brand" is the growing cloud in an otherwise blue sky of expansion for liquid detergents. Using the same tactics that the brethren of the soap and detergent lodge have been known to employ against each other in the past, the chains are pushing their own brands under the stimulus of cut prices. That this strategy is working, particularly on the Pacific coast, is painfully evident. In some instances private brands are actually outselling nationally advertised brands.

Significantly, although this may be considered more in the nature of a footnote, at the May annual meeting of the Super Market Institute in Atlantic City, N. J., of the 529 booths sponsored by manufacturers selling chain grocery stores two private brand makers were represented. This is believed to be the first time the door was opened to such manufacturers. One is a well known Philadelphia firm whose output is seen on the shelves of many chain grocery stores under the label of that chain. On the other hand one soap and detergent producer—the largest—failed to exhibit this year.

Liquid synthetic detergents, more and more, represent to the housewife the most modern type of cleaning material. To her they are less messy, easier to use, represent less waste, and, an important factor in modern compact kitchens, require less storage space on already overcrowded shelves.

Modern, high speed can production lines, such as this one in a plant of Continental Can Co., are needed to turn out the millions of cans required to package liquid synthetic detergents. Cans shown in photo have bottoms assembled and then are pressure tested for possible leaks.

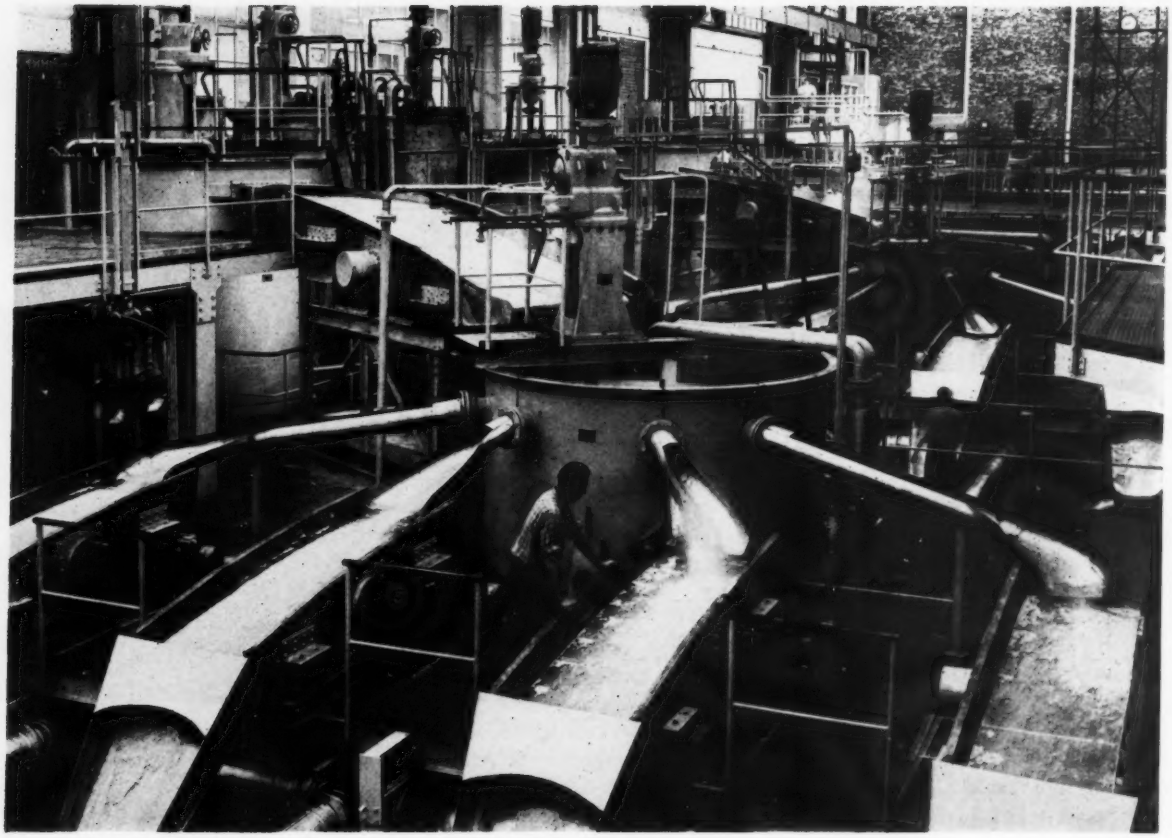
Some of these same advantages apply to the grocer, as well. Not only has the great proliferation of brands of various washing products given him fits trying to find additional shelf space to accommodate them, but increasing package sizes have compounded his woes. The liquids, on the other hand, being concentrated, lack the bulk of the powder product packages and have made his life somewhat easier. Of course, when the gallon and possible five gallon size packages of the future, or the same liquid product in four or five different colors to match Mrs. MacDuff's mood hit him, the grocer will be right back where he started. Though, for the moment the respite is indeed welcome.

Although metal cans are now believed to be in the same price range as glass bottles, price is not the only factor to be considered in this war of wash products. All major marketers have been dabbling with various sizes, styles and types of plastic bottles in attempt to win some sort of advantage over their competitors in the struggle for the preference of the housewife. A number of these "packages" were on display at the packaging show in Chicago earlier this spring, but the suppliers were unusually reluctant to say or do anything about these products for publication. This, then, is another measure of the seriousness of the encounter between liquids and powders. The stakes are high and, at this writing, at least, the outcome is extremely uncertain.

—★—

Aniline Leases Space

National Aniline Division of Allied Chemical Corp., New York, took occupancy early this month of 15,000 square feet of space which it leased recently in a new building at 171 E. Hunting Park Ave., Philadelphia. The company is using the space as its headquarters in that city for sales, warehousing, and technical laboratories. Offices and labs in the one-story brick and steel bulding are air conditioned.



Detergents, emulsifiers are made at Hüls. Shown here is synthetic rubber plant.

Automated Surfactant Plant

By F. V. Wells*,
London, England

A visit to the works of Chemische Werke Hüls, A.G., in West Germany

A PARTY of about 30 British technical journalists and editors flew out to Germany on April 11, as the guests of Chemische Werke Hüls, A. G., in order to become acquainted with recent developments there. As one of those invited, I have confined the following few paragraphs to matters likely to be of particular interest to readers of *Soap & Chemical Specialties*.

C. W. Hüls is a vast concern, main output of which is raw materials for the plastic industry and, in the adjacent factory of its associated company, Bunawerke Hüls, artificial rubber. It is also, however, an important source of ethylene oxide – ethylene glycol polymers, of the polydiol and polywax types, and of their derivatives. Hence its interest, as a major European supply center of many detergent bases, emulsifying agents, soap improvers, textile auxiliaries, solvents and wax substitutes for polishes, etc.

The electric arc plant, which serves for the production of acetylene from gaseous hydrocarbons (waste gas from the hydrogenation process, coke-oven gas and natural gas) may, with certain limitations, be referred to as the "heart" of the works. At present it consists of 17 arc furnace units, a number of which have been converted to automatic operation.

The gaseous hydrocarbon, for the most part methane, enters a pipe 3½ in. in diameter and 39

*Consultant Chemist; Editor of *Soap, Perfumery & Cosmetics*, London.

in. long. An electric flaming arc burns in this pipe, in the axis of which temperatures of 18,000° C have been recorded. The average temperature in the water-jacketed pipe is 1,500° C. At this temperature conversion takes place into acetylene, which is used for many types of production in the factory, and into hydrogen, which is conveyed by long-distance pipelines to the hydrogenation plants, fertilizer and detergent base factories. Additionally, a certain amount of carbon black is yielded which, of late, is scrubbed by a water-oil system.

In passing, it may be said that Hüls produces vast quantities of P.V.C., P.V.A.-P.V.C., polystyrene, polyester, polyethylene and polypropylene plastic materials. In the manufacture of P.V.C. for example, the factory uses acetylene from the electric arc furnaces. The combination of acetylene and hydrochloric acid produces vinyl chloride which can now be polymerized so as to become P.V.C. in two different ways, both of which are used by Hüls. The resulting products are emulsion P.V.C. and suspension P.V.C. Both products look simply like a white powder. Fresh knowledge gained in processing this most versatile of all plastics raw materials has led to Hüls granulating and dyeing the raw material in a newly erected granulation plant.

Polystyrene, the plastic raw material which is used to produce translucent articles, is not quite so versatile. The raw materials used by Hüls to produce polystyrene are benzene and ethylene. A compound of these two substances produces ethyl benzene which is then dehydrated and becomes the monomer styrene. The Hüls' air-cooled styrene distillation column is one of the factory's many impressive features.

The Hüls plant is located at Marl, near Recklinghausen, the nearest airport being Düsseldorf. The total factory area is approximately 2,500 acres. The site is covered by over 12 miles of roads, 25 miles of railway tracks, and 370 miles of pipeline. Hüls' goods station handles about 1000 wagons a day. The factory is logically arranged, well kept and incredibly clean. There are more than 200 distillation towers in the works area, as well as gas holders, laboratories and plant units. Beyond are administration buildings, residential buildings, and even a swimming pool.

Trichlorethylene is a solvent which is, above all, widely used for dry cleaning purposes. At Chemische Werke Hüls it is recovered from acetylene and chlorine, tetrachloroethane being obtained in the preliminary stage, which is then dissociated into trichlorethylene and hydrochloric acid. The plant is controlled from a central station, on the walls of which a graphic panel is mounted. This reproduces in a very realistic manner the functions of the various apparatus and the flow of production. Since at the time this plant was constructed recording control instruments with comparatively small-size fronts were already on the market, use was made of them in the graphic panel, analagous with their effective position in the plant. Here too automatic controllers ensure that temperatures, pressures, rates of flow and liquid levels are maintained constant.

Huls Surfactants

Manufacturers of blended detergents in Europe are naturally interested in Hüls' wide range of detergents, which include: Tetrapropylene benzol, a basic product for the manufacture of synthetic detergents; "Marlon"* (Tetrapropylenebenzol sulphonate), high-grade raw detergent for washing and cleaning agents; "Marlopon"* (triethanolamine - tetrapropylenebenzol sulphonate), neutral detergent for liquid synthetic soaps and hair washing agents and for other cosmetics.

"Marlipal"* (fatty alcohol polyglycol ether), non-ionic raw detergent for making liquid, paste and powdered detergents; "Marlophen"* (alkylphenol polyglycol ether), non-ionic raw detergent for liquid, paste and powdered detergents and rinses. "Marlamide"* (fatty acid alkylolamide), non-ionic raw detergent for liquid, paste and powdered detergents and rinses.

The tube furnace installation for the production of ethylene is of considerable interest.

In this plant, in which ethane, propane and, to a limited extent, other gaseous hydrocarbons are converted to ethylene in a tube furnace or pipe still, modern design principles have been strictly applied; this is clearly expressed by the floor plan. Production is controlled from the central control station, with aid of suitable automatic instrumentation. Here again, temperatures, pressures, rates of flow and liquid levels have to be kept constant. The control station has been erected completely apart from other installations and is con-

*Registered trade name of Chem. Werke Hüls, A. G.

View of distillation towers at Hüls, where basic detergents are manufactured.

nected with them only by electric cables and compressed air pipes of the smallest diameter. Ethylene serves as raw material for the production of ethylene oxide and of styrene for the manufacture of the plastics polystyrene and polyethylene.

Ethylene Oxide Plant

The most modern automatically controlled production plant at the Chemische Werke Hüls Aktiengesellschaft, however, is that for the manufacture of ethylene oxide, which is obtained from ethylene and air by the contact process. Ethylene oxide, which is a gas at normal temperature, has to be stored in a cooled condition or under pressure in its liquid form; it is of course a chemical auxiliary agent much in demand in a number of branches of industry. When processed to glycol it serves as an anti-freeze solution for car radiators. Another of its applications is in automotive brake fluid. The textile industry, the detergent industry, manufacturers of printing inks and pharmaceuticals, the paper industry and pencil and rubber factories make use of ethylene oxide for the manufacture of their products.

The various polydiols and polywaxes produced by Hüls are formed by the addition of ethylene oxide to ethylene glycol:

$HO\text{-}CH_2\text{-}(CH_2\text{-}O\text{-}CH_2)_n\ CH_2\text{-}OH$

—the lower molecular grades being liquid and the product becoming more viscous and finally solid as the molecular weight is increased. The development and application of these products are by no means new, for all the pioneering work has long since been accomplished, notably in the U.S.

A new synthetic rubber plant intended for the production of "cold" rubber only, is said to have an output of 70,000 tons a year. But the activities of Bunawerke Hüls are rather outside the scope of this brief survey.

Research Emphasized

It is interesting to note, however, that C. W. Hüls employs altogether some 200 chemists and physicists. More than half of them are exclusively concerned with problems of research and development. This weighting indicates the importance attributed by the company to research and development work. Research scientists cover the whole of the chemical division from two central points: the science laboratory and the department for application techniques. All other chemists and physicists employed by the company are distributed throughout its different divisions and also work on the shop floor on development problems at factory level. This arrangement shows the importance attached by Hüls to chemists working on scientific development problems in the factory itself. This enables the scientifically trained technician to maintain the high level of his work and at the same time to apply the special experience, which can only be gained in the factory, to far wider fields. The research laboratory adjoins a group of buildings which include a polymerization test installation embodying the latest advances. At this installation, which provides for the pilot production of up to 30 tons a month, technicians and engineers can jointly investigate the technical conditions which would allow a process developed in the laboratory to be applied in mass production.

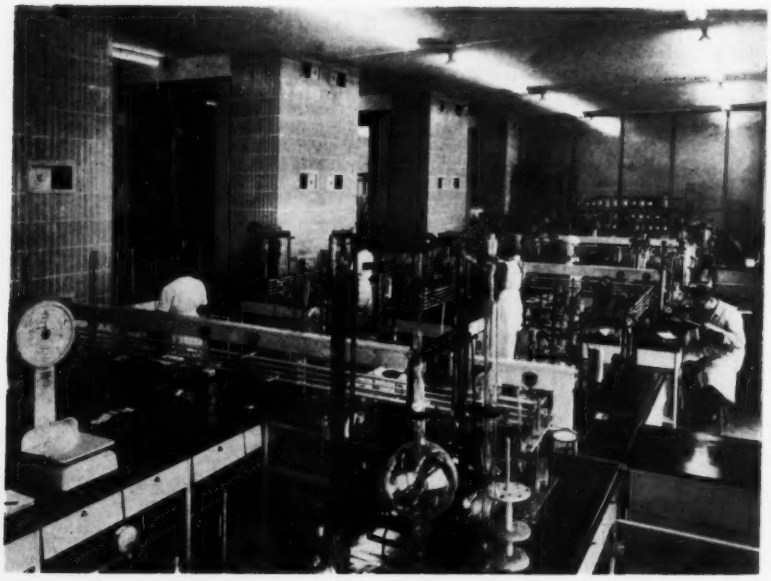
The new laboratory equipment makes it possible to investigate, far more precisely than had been possible with the means previously available, the structure of materials. In the laboratory on the eighth floor, gaseous raw materials which are used by the company in its production are being investigated. To quote only one example, modern equipment makes it possible to reduce the length of a gas analysis from the 20 hours previously required to one and a half hours. The equipment largely excludes human error and also frees the laboratory staff from tiring routine work.

In other sections of the laboratory you can see the latest analytical equipment such as mass spectrographs, equipment for ultraviolet and infra-red spectroscopic analysis and for gas chromatography, apparatus for the diffusion of light and a high-speed centrifuge which reaches 200,000 times the gravitational speed of the earth.

In charge of developments in the detergent and emulsifier field, in the Hüls organization, is the well-known chemist, writer and lecturer, Dr. Hans Tschakert. Dr.

(*Turn to Page* 170)

New research laboratory at Hüls plant is modern in every respect.



Why a limit to

Optical Bleach Fluorescence?

By Eugene Allen,
American Cyanamid Co.,
Bound Brook, N. J.

IT is known that there is a concentration range of optical bleach on cloth beyond which an additional amount fails to give any great amount of additional fluorescence. Figure 1 shows typical curves of fluorescence plotted against concentrations of optical bleach on the cloth. The leveling off of fluorescence at high concentrations is characteristic, and well known (1). The purpose of this paper is to look into the reason for this effect.

Optical bleaches function by absorbing ultraviolet radiant energy and re-emitting this energy at longer wavelengths as blue light. The mechanism by which the fluorescent emission causes a cloth to appear whiter has been discussed in previous papers (2).

A piece of cloth dyed with optical bleach does not absorb all the ultraviolet radiant energy which is directed on it. Some is reflected, and the reflected portion cannot contribute to fluorescence. The amount of ultraviolet radiation absorbed at each wavelength increases with the amount of optical bleach on the cloth. This is exactly analogous to the absorption of visual light by a dyed cloth, where the amount of light absorbed increases with the amount of dye on the cloth.

Furthermore, not all the absorbed ultraviolet energy may be converted to blue fluorescence. The factor, relating quanta of radiation emitted as fluorescence to quanta of radiation absorbed as ultraviolet energy is known as "quantum efficiency." A quantum efficiency of 1 means complete conversion of absorbed to emitted radiation. This is seldom obtained; more often quenching and other effects operate to decrease the quantum yield.

The leveling off of fluorescence at high concentration could, therefore, conceivably be caused either by a leveling off of absorption of ultraviolet energy or by a quenching effect leading to decreased quantum efficiency of fluorescence.

Experimental

Measurements of ultraviolet absorption, fluorescence and relative quantum efficiency were made by means of the Beckman Model DU spectrophotometer with a reflectance attachment plus an auxiliary filter slide. The slide contained a filter capable of transmitting ultraviolet energy but no visual energy (Corning No. 5860). By means of the slide, the filter could be inserted at will between the sample and the phototube.

Ultraviolet energy at 360 $m\mu$ was used to irradiate the sample. Both the reflected portion of the ultraviolet radiation and visual fluorescent light left the sample, but with the filter in place only the reflected ultraviolet was seen by the phototube. When a cloth dyed with optical bleach was run against an undyed cloth as reference, this type of measurement gave a percent reflectance reading, R. Subtracting the reflectance from 100 gave directly the percent ultraviolet radiation absorbed by the optical bleach in the sample. The percentage of radiation absorbed was called absorptance, symbol A; $A = 100 - R$.

A similar measurement of the dyed sample against undyed cloth but with the filter removed gave a reading corresponding to both the reflected and fluorescent light. Subtracting the percent reflected light, R, from this value gave a reading corresponding to relative fluorescence, called F. It should be carefully noted that this F value does not represent the absolute *percentage* of incident ultraviolet energy converted to fluorescence. The reason is that the fluorescence is given off at a different set of wavelengths; this brings into play differences in energy per quantum of radiation, in phototube sensitivity, and in light scatter. A factor must be introduced to correct for these three effects if absolute values are wanted. Since this factor is the same for the same optical bleach, the F values may be used as indication of relative fluorescence as a function of concentration of any one optical bleach, which is just what is wanted here; but the F value of one whitener cannot be directly compared with that of another whitener unless the factors are applied.

Similarly, the ratio F/A (indicating fluorescence per energy absorbed), called Q, may be used as an indication of quantum efficiency. For the reasons given above, the Q values so obtained are not absolute quantum efficiencies, and not even relative values in the comparison of one whitener

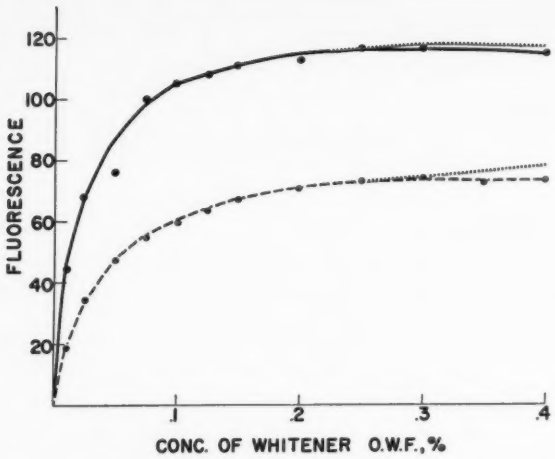


Figure 1. Curves of fluorescence against concentration for whiteners 1 (solid line) and 2 (dashed line). The dotted portions of each curve represent hypothetical fluorescences which should be obtained if the Kubelka-Munk law were obeyed.

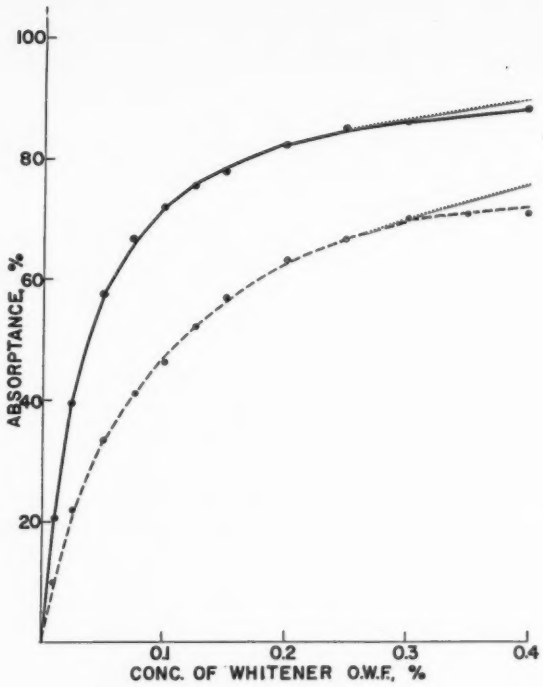


Figure 2. Curves of absorptance against concentration for whiteners 1 (solid line) and 2 (dashed line). The dotted portions of each curve represents hypothetical absorptances which would be obtained if the Kulbelka-Munk law were obeyed.

against another. However, they are relative values in the sense that they show how the quantum efficiency varies with concentration for any one whitener, which is what is desired in this work.

Dyeings of two different optical bleaches were made on cotton. A typical red-shade optical bleach and a typical green-shade optical bleach were used; the former will be designated as Whitener 1, and the latter as Whitener 2. Both of these whiteners were known to exhaust almost completely from the bath. Dyeings of each whitener were made in concentrations ranging from 0.010% to 0.400% on the weight of the cloth. Two thicknesses of cloth were used for each reading, and each dyeing was measured at eight different places and the readings were averaged.

The Beckman instrument was equipped with a photomultiplier tube, which gave adeqaute precision for the work. In the case of the readings with the filter removed, the instrumental values for the dyed cloths were higher than those for the undyed cloths, and therefore the readings were taken in reverse order; i.e., the balance was effected against the dyed cloth and the readings were taken on the undyed cloth. The reciprocal of the resulting reading was used for the calculation.

Results

Curves of F (relative fluorescence), A (absorptance), and Q (relative quantum efficiency) optical bleach on cloth are shown in Figures 1, 2 and 3. Looking at the quantum efficiency curve in Figure 3 first, we see that the efficiency of conversion drops off sharply with increasing concentration at the low concentrations, and very gradually at the high concentrations. However, it is precisely those high concentrations which interest us at the moment; since Q can be considered to be fairly constant toward the right of the curves, variation in Q cannot account for the failure of fluorescence to increase with concentration in this region. Therefore, it seems that the quenching effect is not the main determining factor.

Looking now at the absorptance curves in Figure 2, we note that the percent absorptance goes up sharply at the lower concentrations and begins to level off at the higher concentrations, approaching 100% as the limit—this simply means that there is no more ultraviolet energy to be absorbed. It is interesting that the absorption of ultraviolet radiation seems to obey the Kubelka-Munk law of reflectance, as is shown in Figure 4. In these graphs, the function $(1 - R)^2/2R$ instead of A is plotted against concentration. Obedience to the Kubelka-Munk law demands straight lines in these plots, and for all save the highest two or three concentrations approximately straight lines are obtained. The failure of the Kubelka-Munk law at the highest concentrations has very little effect on either the absorptance or fluorescence. The dotted lines in Figure 2 show the absorptance values which would be obtained if the Kubelka-Munk law held at the highest concentrations. Similarly, the dotted lines in Figure 1 show the corresponding fluorescence which would be obtained from these slightly higher absorptance

values. It is seen that very little increase of fluorescence would result if the samples had obeyed the Kubelka-Munk law.

Figure 2 shows that although the absorptance of Whitener 2 has started to level off at the higher concentrations, the absorptance curve is still not too near the limit of 100%. It might be argued from this that considerably more fluorescence would be possible if the concentration of optical bleach were still further increased. However, it would take a prohibitively large amount of additional whitener to give an appreciable increase in fluorescence. It can be calculated on the basis of the Kubelka-Munk law that an additional absorption of 10% more light (resulting in a corresponding increase of 10% in fluorescence) would require about 70% more whitener. Since the Q curve would probably be dropping faster than the A curve would increase, there would be a maximum in the F curve; evidence of this is seen in Figure 1 and, in fact, has frequently been observed (1).

It therefore appears that the reason that the amount of fluorescence approaches a limit at the higher concentrations of optical bleach is simply that the absorption of ultraviolet radiant energy approaches a limit at these same concentrations. The limit is 100% of the available ultraviolet energy, and additional optical bleach cannot absorb any more ultraviolet because there is no more to absorb. The shape of the fluorescence vs. concentration curves in Figure 1 can be fairly closely predicted on the basis of the Kubelka-Munk reflectance law; it is not known if optical bleaches would follow this law on other fabrics; however.

This behavior is not surprising or unusual because many colored dyes behave in exactly the same way. Considering a blue dye, we know that at very low concentrations small increments of dye produce a fairly large effect on the color of the fabric. However, at high concentrations, a point is reached at which further additions of dye have no further effect on the color. In this region, the color is black; practically all the light reaching the sample is absorbed, and additional dye cannot absorb any more.★★

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(2) E. Allen, *J. Opt. Soc. Am. 47*, 933-943 (1957).
E. Allen, *Am. Dyestuff Reptr. 46*, 425-432 (1957).

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Hooker Names Div. Staff

Executive staff appointments in the phosphorus division of Hooker Chemical Corp., Niagara Falls, N. Y., were announced last month by F. Leonard Bryant, recently named general manager of the division.

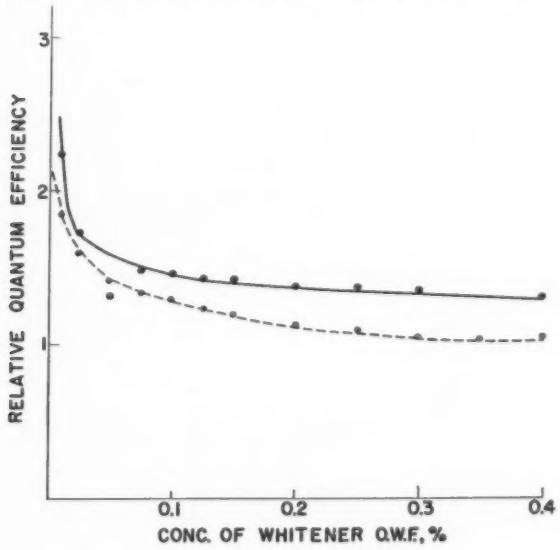
Robert E. Noble has become division assistant general manager. Formerly works manager at the plant of Hooker Chemicals Ltd., in North Vancouver, B. C., the company's Canadian subsidiary, Mr. Noble joined Hooker in 1939.

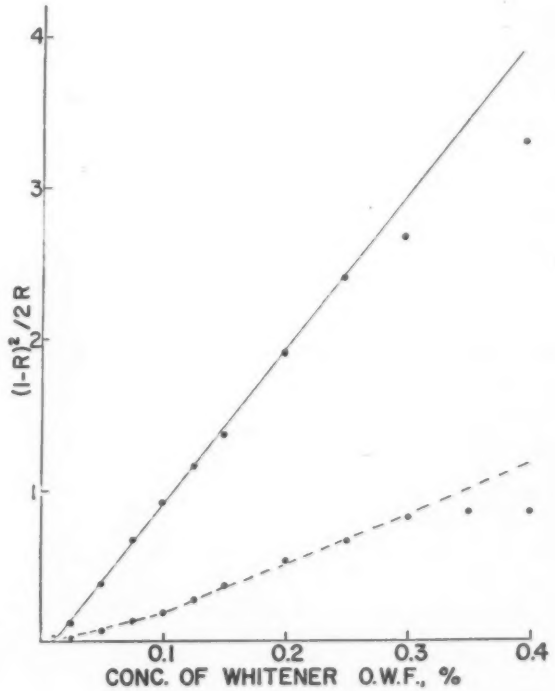
Barrett B. Brown, formerly division technical manager, has been named division production manager. He is succeeded by Edward J. Bissaillon, who was assistant production manager.

John B. Sutliffe continues as division sales manager, and James D. Hogan remains as division comptroller.

Figure 4. Plots of Kubelka-Munk function against concentration for whiteners 1 (solid line) and 2 (dashed line).

Figure 3. Curves of relative quantum efficiency against concentration for whiteners 1 (solid line) and 2 (dashed line).





What detergent marketers should know about

Trends in Household Laundering

THE detergent, textile, and home laundry manufacturing industries are highly interdependent. In discussing home appliance development trends this paper will limit itself to appliances concerned with domestic cleaning chores. Primary emphasis will be on home laundry equipment since it is the area of greatest economic importance to the detergents manufacturer. Furthermore, home laundry probably poses the greatest problems of interdependence of our two industries.

Washer-Dryer Units

The effect of the majority of consumers changing over to automatic washers since World War II is too well known in terms of the detergent business, to be dwelled on here. Certainly, the trend to automatic washers, and the decline in wringer-washer sales, is continuing but now at a slower pace. Meantime, the new product for us all to keep our eyes on is the combination washer-dryer.

Because all combination washer-dryers are of the tumbler-washer type rather than the agitator type, there is a strong bias in favor of low sudsing detergents in these machines. As the proportion of combination washer-dryers increases it would be reasonable to expect a corresponding shift from high sudsing detergents toward low sudsing.

Another point of interest in considering the characteristics of washer-dryers is that they do not employ suds-return systems. The washer-dryer is used to its maximum in convenience when it is operated at random through the week whenever enough soiled clothing has accumulated to constitute a machine load. Even in cases where consecutive loads are run, however, there is a complete drying cycle between washing cycles, so it seems probable that there will be no significant reason to offer suds-return systems on combination washer-dryers.

During 1958, combination washer-dryer industry sales declined, probably more because of their higher price than any other reason. The long term trend still looks favorable to us though. Inevitably, as sales grow and product development effort is intensified, the combination will be a stronger contender for consumer preference in terms of cost, performance, and durability—all of which have to one degree or another presented problems to us in launching these products in our industry.

Automated Clothes Washers

Despite the initial sales of combination washers and the residual sales of wringer washers, the great bulk of machines in use today and for the next few years are and will be automatic washers. Here is our real volume market, and yours.

The automatic washer has by no means been a constant commodity over the last few years—it has changed much in style and function. However, there are still greater changes to come, I am sure, as a result of developments in textiles, detergents, and washing additives as well as of the work continuously being carried on in the research and engineering departments of appliance makers.

In any discussion of home laundry appliance development trends it is almost impossible to isolate discussions of machine development from the changing factors in the detergent industry and in textiles. One big trend, I am sure, is toward an automated washing machine. And the need for an automated machine is easy to understand as we look back at what has been happening in the last five years.

A home laundering clothes washing machine that was typical five years ago had two controls. One selects washing time and the other selects water temperature. That was a de luxe model. On the standard model you didn't get the temperature control knob.

But four years later, last year, 1958, look at what we had! Figure 1 shows the control panel of a popular brand 1958 automatic washer. The time control now permits selection of three different cycles: the normal one of five years ago, plus a special cycle for delicate synthetic fabrics which we added a few years ago, and last year's latest, a special cycle to handle wash-and-wear fabrics in an optimum manner. We still have our wash water temperature (now five settings available instead of two). But we have also added a rinse temperature selector (three choices), and that's not all. There are two agitation speeds, tailored to normal and delicate fabrics; and there is a separate control for spin speed during extraction. In addition, on a typical deluxe model, one might expect to find a panel light control, a suds-return button, water level control, and probably a gadget to dispense one or more additives to

*Paper presented at the 32nd annual convention, Association of American Soap & Glycerine Producers, New York, Jan. 21, 1959.

Appliances

By James Alaback*
Whirlpool Corp.
St. Joseph, Mich.

the wash or rinse cycles.

It is easy to see the basis in fact for the cartoons in consumer magazines depicting the plight of the homemaker who has a new appliance, but, alas, no engineering degree. Well, of course it's easy to poke a little fun at ourselves when we talk about our products like this. It is especially easy to see what's wrong with them after they have been on sale for a year or so, and the public reaction is in. But seriously, the complexity of our products has come about from gradually adding new features, one at a time. Each innovation has real merit in terms of doing a better job on a new textile or taking advantage of a new development in the field of washing solution additives. Our problem now is to retain and even extend the numerous aids to better home laundering while reducing the control of these functions to a level of pleasant simplicity

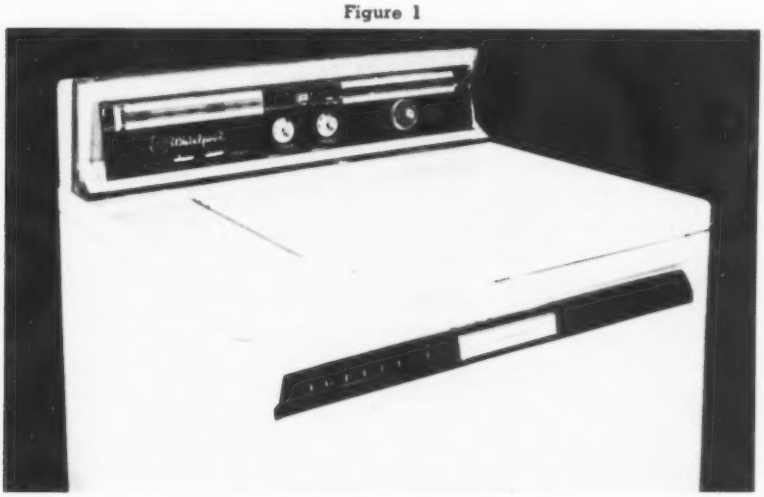
On a new washing machine, we have retained all the variable functions and more, but they have been grouped into a number of pre-arranged washing programs, all under the control of a single button. For example, for an ordinary load of white cottons all that is necessary is to push the left hand button and, automatically, all the the variables of wash time and temperature, rinse temperature and time, agitation speed, extraction speed and so forth are set to the correct operations for white cottons. In our opinion this development may start a new trend: Automatic reservoir-type dispensers for detergents and other wash-conditioning materials can become an integral part of automated washing programs in the rather near future — perhaps one to three years will see substantial movement in this direction. The implications of this trend will be important to the detergent manufacturer.

Despite some concentrated development efforts in the last year or two, we have not yet found a good way to store and dispense granular detergents. We have had incentives to develop such devices; the generally superior distribution, acceptance, and performance of granular detergents. I know that you too have a big stake in this and in some cases have undertaken or supported development programs to the same end. But time marches on and I honestly feel that we are going to have to move to liquid detergents for storage and dispenser applications, despite some drawbacks, simply because of the greater natural adaptability of the liquid detergent to our product objectives. I urge you to continue your development of suitable liquid detergents for home laundry applications in the knowledge that (with the best assurance we can give for future trends) this is the way that our automated washers are going.

As a final observation along this automated washer trend of thought, I'd say that a bank of reservoirs or dispensers for such items as detergent, water softener, bleach, and rinse conditioner can pose some problems to the consumer. Even though she may have a one-button control to put everything into action in her future machine, the homemaker will have the various ingredients to add from time to time. It seems to me that it might be a consumer service, and a marketing advantage for producers, who could arrange to do it, to offer a packaged "kit" of laundry materials in the proper

(*Turn to Page* 170)

Figure 1



Perfume

Analytical chemist using vapor fractometer, shown above, can complete an analysis in as little as a few moments. The same determination using older methods would have required several hours.

"WE are buying odors, not chemical analysis." This comment has been repeated so often by the perfumers that it has become just a figure of speech. The informed analytical chemist in the perfume materials industry is well aware that the materials he analyzes are used for their odors, and that the results of his analysis may supplement but not replace the perfumer's evaluation.

The great progress in analytical capabilities accompanying the introduction of the new instruments may have been looked upon with suspicion and disfavor by some perfumers. When the infrared spectrophotometer was first announced and offered to the analytical chemist, there was an implication, and some of us got the impression, that this $15,000-$20,000 gadget had a particular application to our perfume and aromatics industry. It was said that it was suited to the evaluation of odors. This sort of thing might have lessened the importance of the perfumer. Now that we have learned the facts, we know that nothing could have been farther from the truth. The perfumer's role has actually been enhanced by instrumentation. The analytical chemist must now work with the perfumer more than ever.

Most of the aromatic products used in our industry are reasonably pure, according to distillation ranges and the usual chemical analyses. However, many of them are actually mixtures of stereo isomers. You may prefer the odor of one or two of the isomers, while others may have an undesirable odor, or practically no odor at all. The perfumer is now able to study and evaluate odors of pure products. This should be a challenge to the research perfumer, now that instrumental control has given him access to such materials. So there really exists no controversy between instruments and the perfumer. Even if instrumental analyses indicate an aromatic as pure, it may not necessarily mean that the odor is the strongest or most satisfactory one. This decision has to be left to the perfumer as the final judge. No spectrophotometer will ever buy an ounce of perfume and no consumer will ever buy a product with a perfect spectrophotometric graph if it does not give him the desired effect.

In our laboratory we have put the instruments to their proper use, making quantitative and qualitative analyses. Many of the conventional chemical and physical methods are being replaced or supplemented by modern instrumental methods. These methods do save time, but what is most valuable they give more information, sometimes, too much information. The time saved by instrumentation is easily measured. For example, the analysis of turpentine for its pinene content takes several hours by the conventional chemical method. With the infrared spectrophotometer or the vapor phase chromatograph, this analysis takes only a few minutes, and it tells you how much α-pinene and how much β-pinene the turpentine countains.

Thumbing through our new instrumental methods procedures and comparing the time spent using the old chemical or physical methods, it will be realized that instruments readily pay for themselves. In addition, recourse to instrumental methods often makes it possible for us to shed light on previously dark areas.

We have always talked about alpha, beta, gamma or cis and trans isomers, but mostly when talking with the research chemist. Today you hear the perfumer using this language too. The perfumer, aided by research and analytical chemists, can intelligently select those isomers which have the best odors. The research chemist is still in the picture, as well, because once he knows which isomers the perfumer wants, he can improve the chemical process to enrich the concentration of this particular isomer. In most cases his research has to start with the raw material. The sources available to him may look the same, have the same boiling points, specific gravities and congealing points, but a gas-liquid chromatographic curve may show quite a difference. He will probably start talking isomers again because very often isomers have closely related physical specifications.

Too much information, as mentioned above, somewhat facetiously, is not uncommon. As more and more laboratories become instrument conscious, the analytical

*Paper presented during the annual symposium of the American Society of Perfumers, New York, April 20, 1959.

Analysis by Instrumentation

By V. Daniel Johnston*,
Givaudan-Delawanna, Inc.,
New York

chemist is put to the task of explaining instrumental differences which previously had caused no concern. A customer may report that the product he buys from one supplier has an infrared absorption band at 8.6 microns, while that from a competitor does not; or he may report that one product gives only one peak on the gas liquid chromatograph, while that of another supplier gives two peaks. The customer was completely satisfied with his two sources of supply until his instrument brought to light a difference, and now these differences must be resolved.

Our instrumental procedures are divided into two groups, the optical and chromatographic. We will by-pass the technical background and data interpretation and discuss the application to our industry and how they aid the perfumer.

In the optical, or spectrophotometric group we use the ultraviolet for many quantitative methods employing a Beckman DK[2] automatic recording spectrophotometer. The instrument is extremely fast, scanning the ultraviolet region in approximately one minute. This area of the spectrum is useful for the determination of aldehydres and ketones, conjugated double bonds and aromatic compounds. Our ultraviolet procedures allow, as examples, the determination of alpha and beta content of ionones, the aldehyde content of alcohol and acetal, dehydrocyclamen aldehyde in cyclamen aldehyde and other unsaturated compounds.

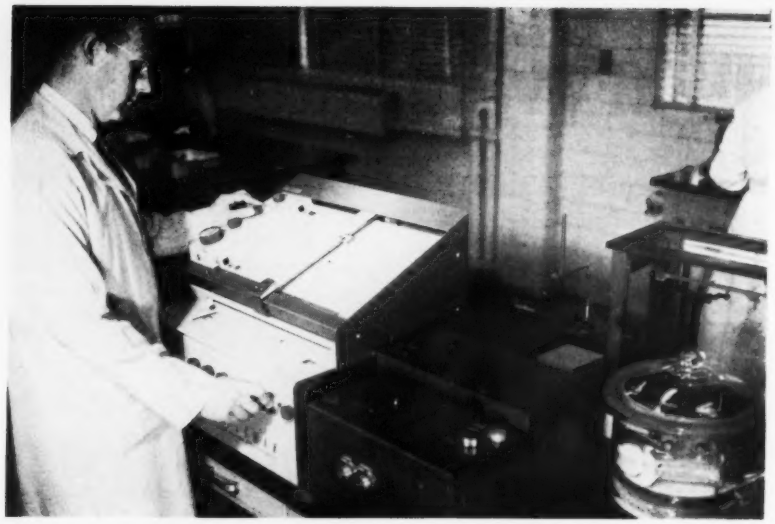
One of our first projects with ultraviolet instrumentation was a study of the ionones. The perfumers knew the odor of the various grades, but instrumental methods determined the isomer distribution in these grades so that the manufacturing controls could be established, which would yield more uniform products. Another example was the determination of the amount of dehydrocyclamen aldehyde in cyclamen aldehyde. Process improvements made it possible to eliminate completely the dehydrocyclamen aldehyde, but the purer product became unsuited for certain applications of the cyclamen aldehyde. Analysis of the lots with the desired odor showed that they contained a certain amount of dehydrocyclamen aldehyde. Here, instrumental analysis and assistance of the perfumer helped to resolve the problem and guided the production chemist with quantitative figures for his process control. Many other examples could be given which follow the same pattern.

The ultraviolet region is not very descriptive or useful for the identification of compounds and functional groups, but it has the advantage of quartz optics and sample cells and a good assortment of solvents which are transparent at the wave length of this radiation. The same instrument is useful in the visible area of the spectrum, 400-700 millimicrons. We use it for a number of colorimetric procedures, also for a periodic check on our inorganic color standards. However, while an elaborate instrument such as the Beckman DK[2] is not necessary for most of the colorimetric procedures, it also allows determinations of higher wave lengths, namely, the very useful band of the spectrum from 1,000-3,200 millimicrons or the near infrared. Our procedures for the near infrared make possible the determination of water in a number of products, as well as indicating the aldehyde content of alcohols and acetals, the alcohol content of esters and ethers and free acetic acid in acetic anhydride. Alcohol in a concentration of less than 0.1 per cent can be determined accurately in an ester or an ether. Not much work has been reported on the near infrared, but many useful quantitative procedures can be worked out.

The infrared region has received most of the attention. The segment of a spectrum 2-15 microns is usually considered the infrared region. Our instrument is the Perkin-Elmer model 21 double beam spectrophotometer with die and press for preparing potassium bromide pellets which extend its use to measurements of solid products.

Truly the workhorse of our laboratory, this instrument has been in constant use, 8-12 hours daily, for almost six years, turning out thousands of spectrograms each year. Valuable for the identification of chemicals and their functional groups, the infrared absorption has been one of the strongest

Man below is reading a spectrograph which is made on a recording infrared spectrophotometer in the laboratory of Givaudan-Delawanna, Inc.



Workhorse of the Givaudan laboratories is this double beam spectrophotometer with die and press for preparing potassium bromide pellets which extend its use.

techniques available to the analytical chemist. It is an instrument upon which we have become dependent.

Methods for the determination of trace quantities of impurities to direct assays of isomer mixtures have been developed. We have many procedures for the control of raw materials, including essential oils and even civet. Various manufacturing processes are controlled and followed by infrared analysis such as hydrogenation and esterification. These processes must be carried to a certain limit, beyond which undesirable by-products form.

We have always worked closely with our perfumers when testing finished products. To satisfy their requirements for purity and uniformity of odor, we rely on infrared analysis.

A more recent adjunct to instruments for the analyst, is the vapor phase chromatograph. This instrument is widely used in many laboratories. This technique was reported only a few years ago and its rapid development is without parallel.

Many good instruments are offered. Our laboratory is equipped with two Perkin-Elmer Vapor Fractometers, Model 154C. These instruments are in operation eight hours daily, usually with a polar column in one instrument and a non-polar column in the other. A time clock device turns on the instrument early in the morning so that temperature equilibrium is reached by the time work begins.

Vapor phase procedures are employed for the evaluation of many raw materials including most of the important essential oils used in our factory. More information is obtained by this method than from all the other analytical methods combined. All the important constituents stand out in VPC graphs. 0.1 per cent maximum is a specification for one of the impurities in an intermediate before it can be nitrated into a musk. This control analysis is made by VPC. There are many problems in trace analysis which have been solved with this instrument. A random list of items in part evaluated by VPC include the fatty alcohols and aldehydres, dimethyl octanols, citronellol, nerol, geraniol, eugenol and cis trans isoeugenol, methyl, dimethyl and trimethyl anthranilate, linalool, the menthols, the methyl ionones, alpha and beta terpineol. One can expect the VPC to replace many standard methods of analysis because the results are much more specific.

There are many examples which will illustrate the value of this instrument to the analyst and perfumer. Let's take one problem which could present itself. In starting on a comparison of various samples of citronellol, one has been selected as especially well suited for the purpose. It may be necessary to assure that this quality will always be available and that specifications for future purchases can be supplied. Commercial grades of citronellol are likely to contain various amounts of rhodinol, geraniol, dimethyloctanol and probably even some nerol. If the analytical laboratory is requested to run the vapor phase chromatographic curve with a particular sample, a quantitative report will be received shortly indicating how much of each of the above constituents are present. If one is interested in the odor of each of the constituents, the instrument can be adjusted so it will handle a larger sample and permit collection of various components in pure form for further odor evaluation and infrared studies. Such information may also help the perfumer to establish which of the constituents are desirable and which are undesirable for his application. This will result in final specifications for a special product free from all unwanted components.

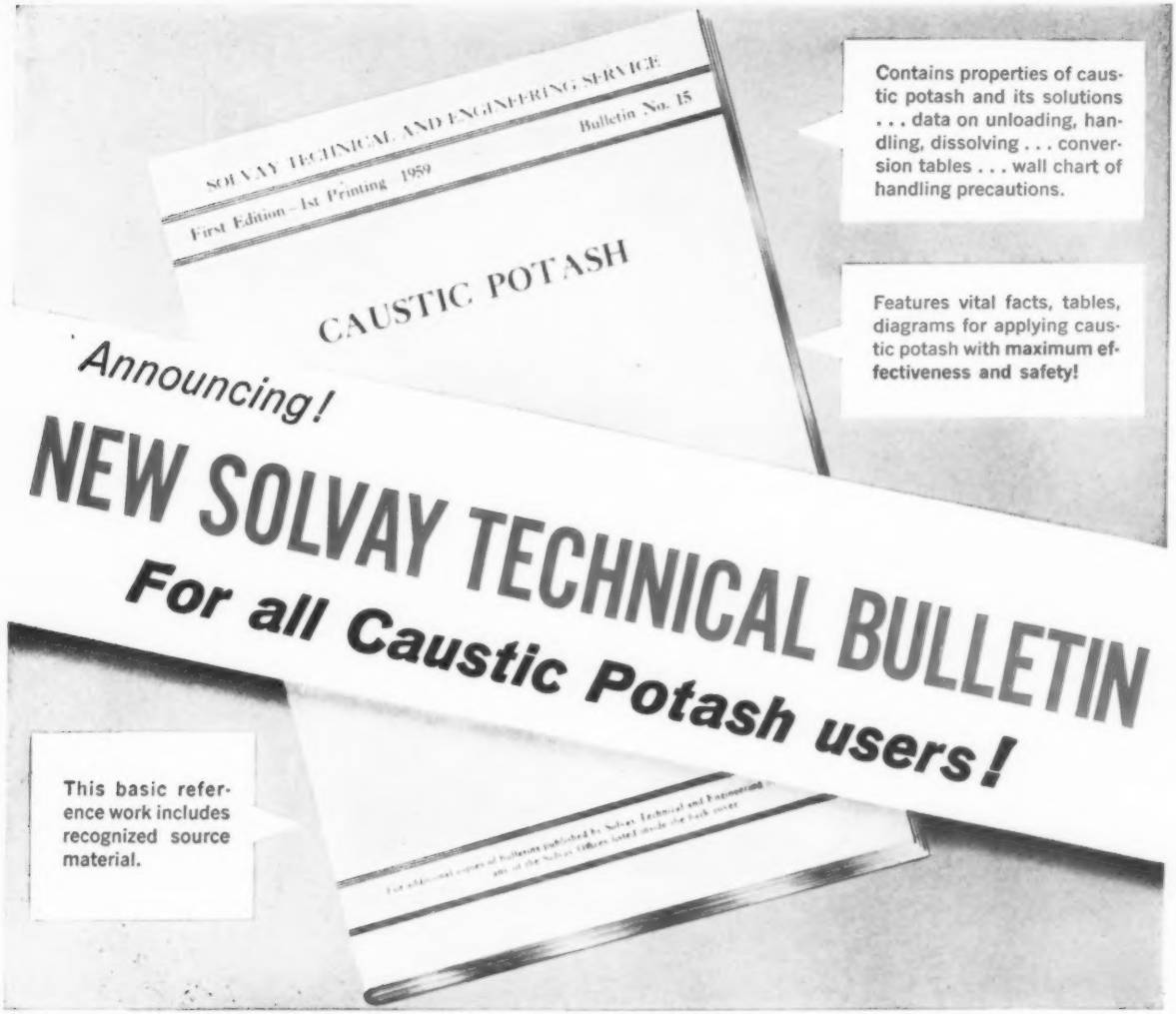
The perfumer tries to control product quality by a qualitative analysis—smell. By enlisting the aid of the instrument analyst, it is possible to change from qualitative to quantitative. Once the desired odor quality has been selected a standard sample becomes available and standardization follows.

In summary, it can be stated that instrumental methods save time and give more information, and have resulted in a steady quality improvement of products through their application to raw materials, intermediates, finished products and process control.★★

—★—

Henri Costberg Dies

Henri Ernest Costberg, 50, a vice-president of Parfums Dana, New York, died of a heart ailment May 31st in White Plains (N. Y.) Hospital. He was a director of the Toilet Goods Association.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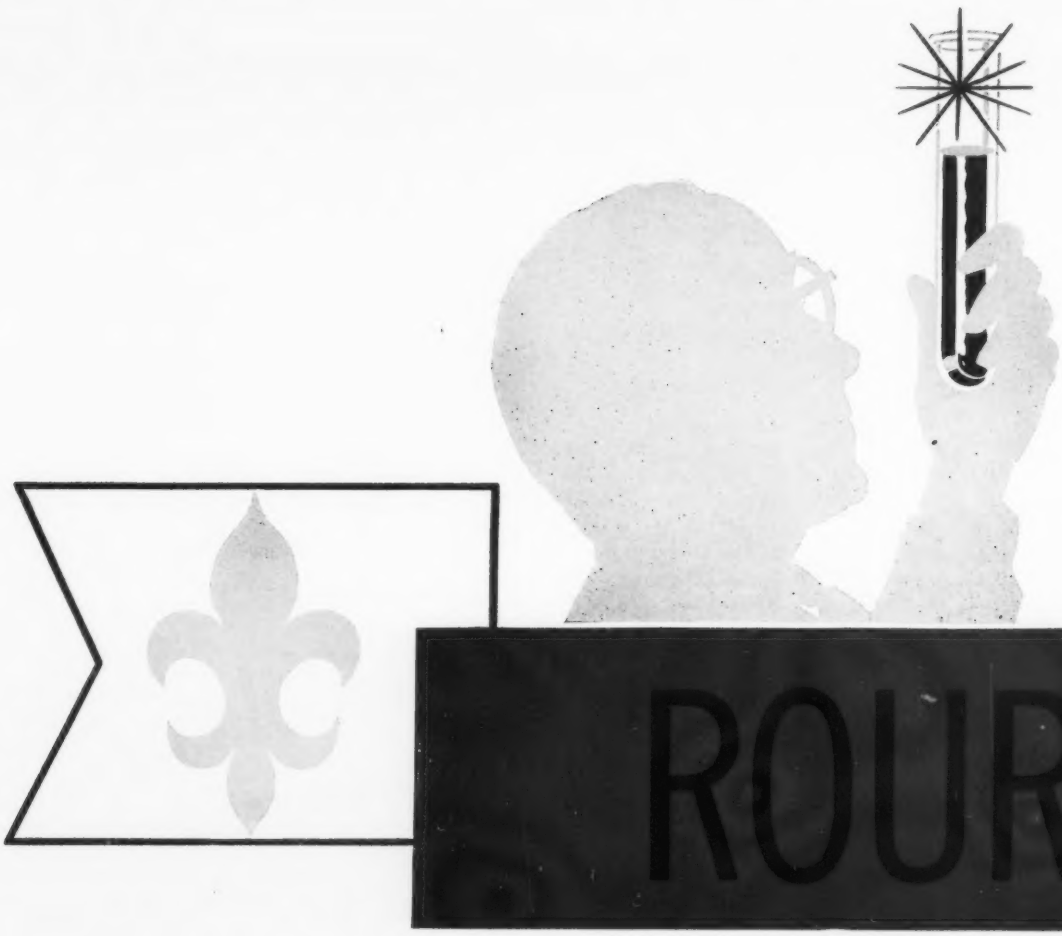

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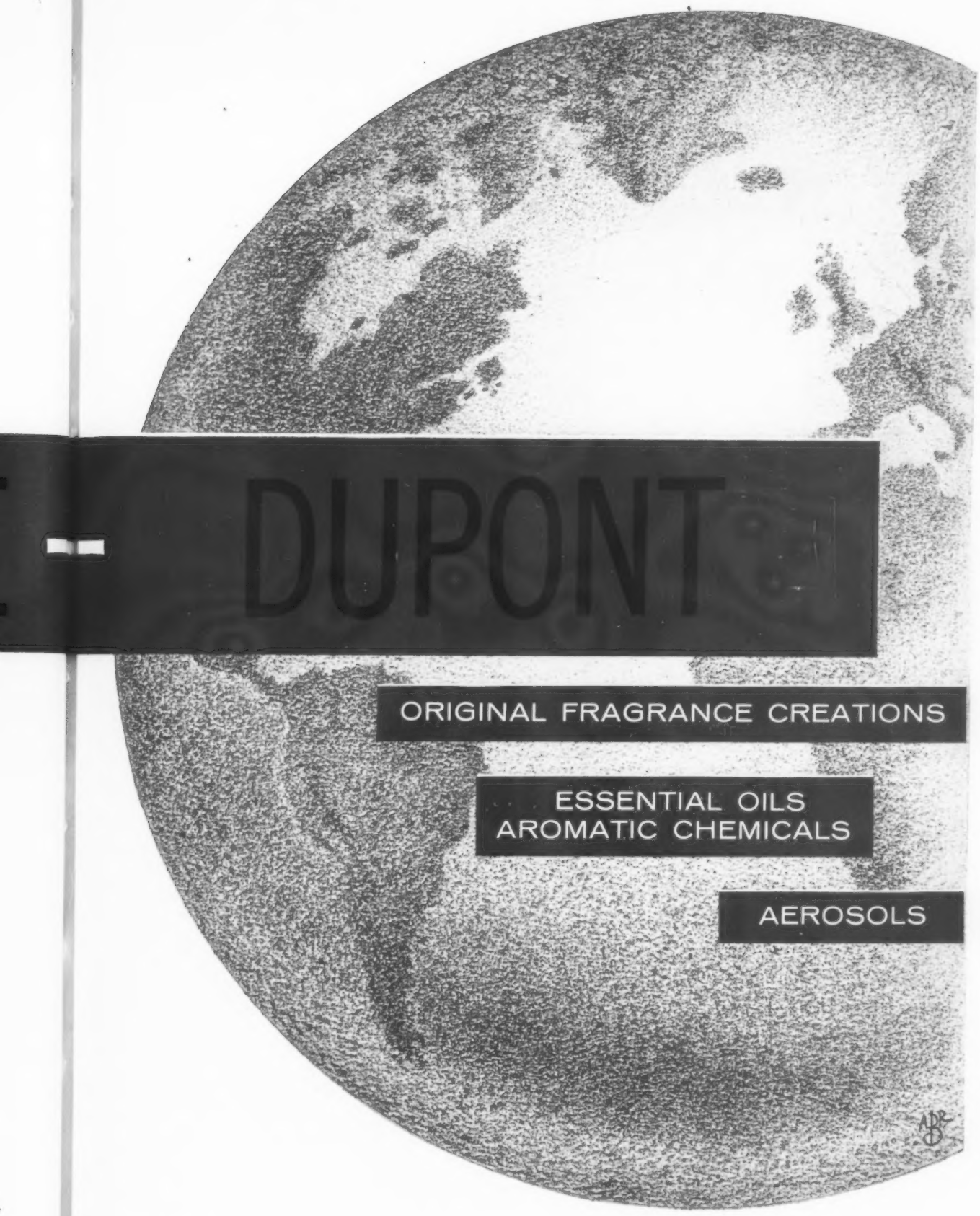
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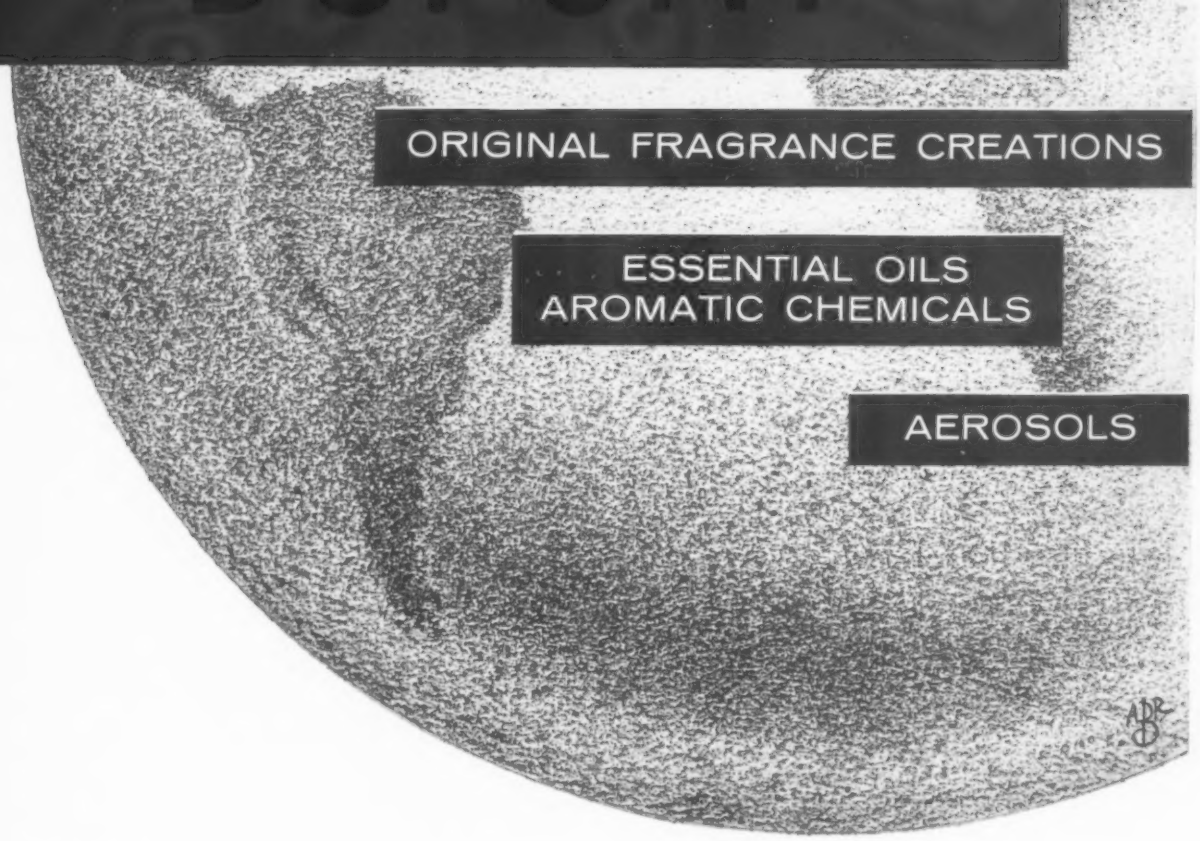
SPECIFICATION	WHITE OLEINES		RED OILS			
	GROCO 6 USP	GROCO 5L Low Linoleic	GROCO 2	GROCO 4	GROCO 8	GROCO 18
Titre	2° – 5°C.	2° – 5°C.	3°C. max.	4° – 6°C.	8° – 10°C.	18° – 20°C.
Titre	36° – 41°F.	36° – 41°F.	37.4°F. max.	39.2°–42.8°F.	46.4°–50.0°F.	64.4° – 68°F.
Color 5¼" Lovibond Red	1 max.	1 max.	1 max.	1 max.	1 max.	2 max.
Color 5¼" Lovibond Yellow	8 max.	8 max.	10 max.	10 max.	10 max.	15 max.
Color Gardner 1933	2 max.	2 max.	—	—	—	—
Unsaponifiable	1.0% max.	1.0% max.	1.5% max.	1.5% max.	1.5% max.	1.5% max.
Saponification Value	199 – 204	201 – 206	198 – 203	198 – 203	198 – 203	204 max.
Acid Value	198 – 203	200 – 205	197 – 202	197 – 202	197 – 202	203 max.
% F.F.A. as Oleic Acid	99.5 min.	99.5 min.	99 min.	99 min.	99 min.	99 min.
Iodine Value (WIJS)	95 max.	90 max.	95 max.	94 max.	92 max.	85 max.
Refractive Index						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Saponification Value	199 – 204	201 – 206	198 – 203	198 – 203	198 – 203	204 max.
Acid Value	198 – 203	200 – 205	197 – 202	197 – 202	197 – 202	203 max.
% F.F.A. as Oleic Acid	99.5 min.	99.5 min.	99 min.	99 min.	99 min.	99 min.
Iodine Value (WIJS)	95 max.	90 max.	95 max.	94 max.	92 max.	85 max.
Refractive Index 50° C. (Average)	1.4500	—	1.4505	1.4500	1.4495	1.4485
Total Polyunsaturated Fatty Acids	—	3.5% max.	—	—	—	—
COMPONENT FATTY ACIDS						
C14 Myristic	5%	6%	5%	5%	5%	5%
C16 Palmitic	3%	2%	4%	5%	6%	10%
C18 Stearic	1%	—	1%	1%	2%	4%
C18 Oleic	82%	89%	80%	79%	77%	72%
C18 Linoleic	8%	2.5%	9%	9%	9%	8%
C18 Linolenic	1 %	0.5%	1%	1%	1%	1%
MACKEY TEST:						
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Tools of Preventive Medicine:

Insecticides and Germicides

By Lawrence B. Hall*,
Communicable Disease Center
U. S. Public Health Service
Savannah, Ga.

MOST of us today take for granted our way of life in the United States, but it requires only a visit to the rural areas of a less fortunate country to remind us forcefully that we do live differently than does most of the world. These differences are not in material things alone—automobiles, washing machines, television—but are evident in the health of our people. The Central American, the Asian, and the African mother expects, as a matter of course, to bear four or more children for each one that attains the age of five, and there are few old men in these areas, for disease reaps its harvest early in life.

Why, then, are we, and the peoples of a few other areas of the world, so favored? It is, of course, due to many factors; climate, nutrition, and natural resources make the struggle for existence a little less strenuous, but the major factors are those of clinical medicine and preventive medicine, two sciences brought to a stage of perfection which has resulted in an increase, in the last half century, of a score of years in man's life span.

Without doubt clinical medicine has played a large role in bringing about this increase. New wonder drugs and marvelous surgical techniques are announced in the press almost daily. Usually with less fanfare, and certainly with less public interest, the science of preventive medicine has contributed greatly to this change in life expectancy. Long before there were specific drugs to cure many of the diseases there were ways known to prevent them. In some countries these preventive steps were taken, in some they were not. The result is evident in the present patterns of disease across the world.

Preventive medicine probably came to this country when Surgeon J. J. Kinyoun of the Marine Hospital Service, later the United States Public Health Service, brought to this country from Europe the exciting new knowledge of Pasteur, Koch, Ehrlich, and others. (1) In 1887 Kinyoun, whose name is almost unknown even to the officers of his own service, established the National Hygienic Laboratory at the Marine Hospital, Staten Island, New York. Kinyoun became the first director of his laboratory which was to become the National Institutes of Health, probably the largest center of medical research in the world today.

It was only forty-six years ago, in 1913, that Dr. M. J. Rosenau published the first edition of his authoritative volume, "Preventive Medicine and Hygiene." Since that time many government and private agencies have devoted themselves to this method of improving the lot of mankind. Research has put into their hands many tools to fit specific needs. One of the first of these was diphtheria toxin which largely relieved the fathers and mothers in the United States of the horror of watching their children die of this strangling disease. (2) Improved smallpox vaccine practically removed the scourge of that disease from the face of the land.

Along with these victories came the conquest of yellow fever, when Reed and Carrol showed that the unknown agent was carried by mosquitoes; and Sir Ronald Ross reported the finding of the malaria parasite in mosquitoes. It was thus that preventive medicine entered the area of vector control and that chemicals, as distinguished from drugs, became important tools in the prevention of disease.

Insecticides

It is truly difficult to realize how rapidly the use of chemicals, in the prevention of disease, has expanded. Probably many can remember the burning of sulphur candles in sick rooms following childhood bouts with chicken pox and measles. A bit earlier sulphur and formaldehyde were used in frantic, but largely ineffectual attempts to stop the terrors of yellow fever. Until early in the century these were virtually the only insecticides and germicides which were available to combat the disease in man's environment. As recently as 1935, Rosenau listed as available only seven insecticides: sulphur,

*Paper presented at the 45th midyear meeting, Chemical Specialties Manufacturers Association, Drake Hotel, Chicago, May 19.

pyrethrum, hydrocyanic acid gas, disulphide of carbon, carbon tetrachloride, petroleum and arsenic.

By contrast the Communicable Disease Center's Operational Memoranda on Economic Poisons lists some twenty-three major pesticides.[3] Of Rosenau's seven, only pyrethrum appears on this list of modern insecticides.

Fighting Malaria

It was with the old insecticides, largely oil and arsenic, that war was started in the United States against that most widespread of vector-borne diseases, malaria. This debilitating disease at one time covered a large share of our nation. It was far from unknown during the last century in southern Michigan. As recently as 1943 a small epidemic occurred among convalescing soldiers in Battle Creek. Eventually, a higher standard of living, better housing, improved nutrition and other factors forced the disease southward until at the beginning of World War II it was largely confined to the states of the southeast. During the depression years the malaria parasite had its golden age in the South, climate was ideal, humans were exposed in rural areas, and there was no money with which to combat the mosquito. As a result, malaria reached its last great tidal wave in this country in 1936. As we began to fight our way out of the depression the attack on malaria was pointed at the larval stage of the mosquito vector. Some breeding places were drained or filled, but the application of oil or Paris green to watered areas was the most common procedure. Unfortunatly, filling was expensive, drainage needed maintenance, and larviciding had to be repeated every few days. Despite the best that could be done progress was slow, even when federal support was added to the state and local control measures to protect our armed forces in the South at the beginning of the war.

The war was nearing its end when the rediscovered DDT became available for operational use in this country. The prospects offered by this wonder insecticide staggered the imagination of old malaria hands. Among the stories going about was one to the effect that its potency was so great that mosquito breeding would be prevented for miles around by ducks carrying the insecticide on their feet and feathers from one treated to many untreated ponds. Reality was not long in forcing itself forward. It was found that the new insecticide was not just an improved Paris green, but a new tool which required new techniques for use. Fortunately the way had been shown by Russell and Knipe when they used pyrethrum as a residual insecticide in India.[4] This they did by applying the material with small motor driven paint spray guns. Treatments had to be repeated each week. It worked by the simple means of attacking the mosquito at a vulnerable point—while resting on a wall to digest a blood meal taken from a human whose blood contained malaria parasites.

A fatigue test for sprayer tanks.

The use of pyrethrum in this manner was out of the question on a large scale, but DDT made the theory of residual insecticides practical. However, there was still much to be done. How was DDT to be formulated, how toxic was it to man, how was it to be applied? These were critical questions for the health of a nation welcoming its soldiers back from war, thousands of them carriers of malaria. The Technical Development Laboratories of the Communicable Disease Center, known then as Malaria Control in War Areas, devoted itself, as did others to finding the answers to these questions.

Out of this research came an operating program in thirteen southern states which applied DDT to the walls of hundreds of thousands of homes.[5] This work, combined with a nation-wide increase in the standard of living and the widespread use of household insecticides, has resulted in the essential eradication of malaria from the United States. Preliminary reports for 1958 indicate that there were only three proven cases of indigenous malaria,[6] although the spraying program drew to a close in the early part of the decade.

Not so fortunate is the rest of the world in which a total of approximately half the world's population, some 1.2 billion, is exposed to the risk of malaria.[7] Of this, 466 million people have been protected, but 702 million have no

protection with the result that at least 200 million people annually suffer clinical attacks and about two million die of the disease each year. To eradicate this disease from the world, many national and international agencies are uniting their efforts, among them the United Nations Childrens Fund, the World Health Organization, the Pan American Sanitary Bureau, the International Cooperation Administration, and the Ministries of Health of dozens of nations.

Methods of Application

One of the phases of these investigations involves the equipment by means of which DDT and other insecticides may be efficiently and economically applied. Involved in this question are problems of world-wide logistics, human habits, native manual dexterity, the physiological characteristics of native labor, and even religious prejudices and beliefs. It was found early that the power driven paint spray gun was not suitable for use in this work, except in a few specialized situations. Equipment was needed that was simple mechanically, light in weight, and with a low unit cost. In addition, it had to be readily transportable by one man, had to leave one of his hands free to brush aside curtains, furniture, and similar objects, and had to produce a uniform, even spray to minimize overtreatment and avoid undertreatment. It was found that the basic design of a tank type of sprayer, holding two to three gallons of liquid under a volume of compressed air, and delivering the liquid through a nozzle giving a flat fan shaped discharge best served the purpose. The nomenclature for this type of sprayer varies from country to country, but the term "compression sprayer" is fairly well accepted.

Unfortunately the compression sprayers that were commercially available when DDT came upon the scene were not entirely suitable, for they were largely designed for intermittent and occasional farm the malaria programs which called for use of the sprayer eight hours a day, six days a week and the year around could not be completely met by the available product. Tanks leaked, pumps collapsed, gaskets swelled, and plunger rods bent. Each failure, a simple enough thing to repair in this country, was a major catastrophe, upon which human life literally hung, in the remote parts of the world far from sources of repair parts and tools.

Sprayer Specifications

Seeing the need for more sturdy equipment, fully compatable with the insecticides available, the World Health Organization's Expert Committee on Insecticides established preliminary specifications for sprayers at its first (8) and second (9) sessions. Later these were expanded and brought to their present stage by the sixth session of the Expert Committee in 1955. (10) In the preparation of all these specifications, it was realized that source specifications would be impossible to enforce. Exact drawing specifications were believed undesirable for these would limit competition and would not take advantage of the ingenuity and knowledge of the industry. The present specifications are therefore based on performance. Tests are required which duplicate, and accelerate as far as possible, the use which the sprayer will experience in the field. Much of this test procedure was developed by the Technical Development Laboratories in Savannah, Georgia, where tests are still carried out for agencies of the United States government. (11) An excellent laboratory for the same purpose exists in New Delhi, India, and more are proposed for other areas of the world. In addition, several manufacturers in this country are well equipped to test their own production against these specifications.

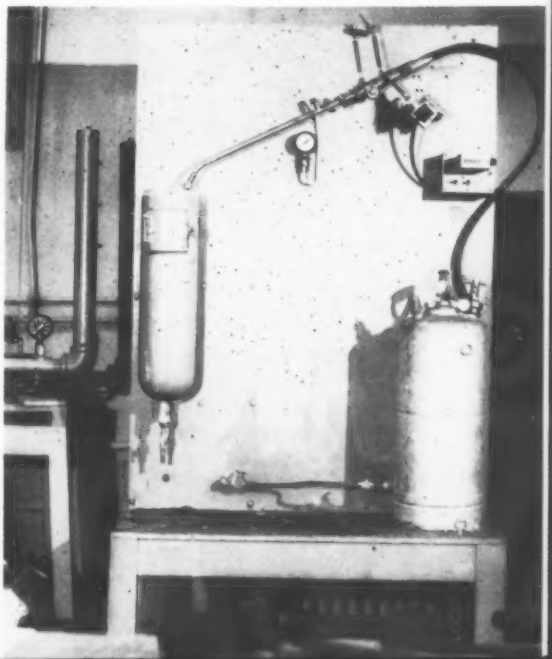
Well over one hundred items are tested and checked in the full evaluation of a sprayer. One of the most important tests is for fatigue of the tank. Each time a compression sprayer is used the air pressure deforms the metal of the tank. A device in the testing laboratory duplicates this action at the rate of five cycles per minute for a total of 12,000 cycles. Failure of sprayer tanks to meet fatigue requirements can result in explosions dangerous to the operator. This failure sometimes occurs in the side seam and occasionally the bottom seam fails. In the latter case the sprayer suddenly takes on the appearance of a rocket with unpleasant results to anyone in its path.

The cut off valve is tested by operating it mechanically over many thousands of cycles or until failure.

Similarly, the pattern of delivery of the nozzle is determined by collection of the runoff from each unit of width of the spray on a collection board designed for this purpose. This method, however, is too time-consuming for many purposes and development is progressing on a method of electronic scanning of the spray pattern.

Many other aspects of sprayer performance are tested and the final evaluation of the unit is summed up by an experienced technician after an examination of all the results.

Device used to test cut-off valves.



Sprayers which have been designed to meet these specifications are currently being produced in the United States, England, Italy, India, and perhaps other countries. The quality of the several designs varies considerably. In some countries the best materials are not available and less satisfactory substitutes must be used. This necessity is recognized by the WHO specification which is not binding on any local government or procurement agency, but is only offered as a standard. International agencies tend to accept the WHO specification as it stands, government agencies vary it slightly to require the best their own industry can produce. Others may lower its standards to a level which their local industry can meet. It must be emphasized, however, that these specifications were designed only for malaria control equipment. Attempts to apply them, in their entirety, to other end uses, such as pest control or military operations, should be undertaken only after careful study and field trials.

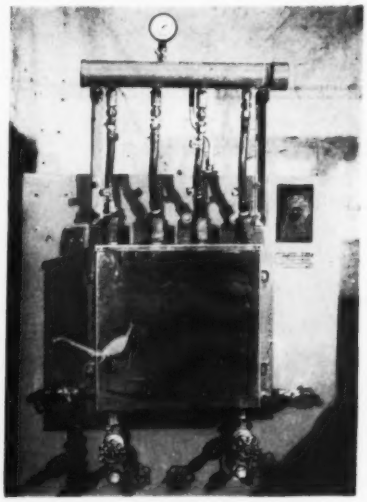
Compression Sprayers

The compression sprayer, even at its present best, is only a compromise with requirements. It needs frequent refillling; it requires human power; it is bulky; methods for agitating its contents are crude; its volume of delivery varies; its nozzle orifice erodes; there is at least a fifteen percent loss between the nozzle and the treated surface; and it all too frequently deposits enough insecticide on the operator to present a toxic hazard. With all its faults it is surprising that the compression sprayer accomplishes as much as it does. So far no one has come forward with a more acceptable substitute. True, variations have been tried. Large tanks, utilizing motor driven agitators and pumps mounted on trucks and jeeps, delivering their insecticide through two or more long hoses, have been used in urban and semi-urban locations, mostly in the United States. A problem in the U. S., because of difficulty in handling the long hoses, these devices become impossible in jungle, forest, and mountain locations where the best road may be no better than a faintly marked foot path. Fog generators, of both the thermal and mechanical types, have been put forward as a solution, but again the problems of transportation loom large in addition to problems of maintenance of rather complex machines in primitive lands and the fact that fogs leave little residual on the vertical surfaces where they are most needed. For these and similar reasons the compression sprayer will probably be used by malaria eradication projects until someone comes forward with radically new equipment or techniques.

In the meantime, the problems of the compression sprayer are being met as best they may. Maximum total capacity of the units is about four gallons with a liquid charge of three gallons. Total discharge of this volume is usually accomplished by two or more pumpings. There is reason to believe, however, that better total efficiency may be achieved by using a liquid volume of only half the total capacity of the tank with one pumping.

The pumping of the sprayer is still accomplished by manpower, a commodity in short supply in this country, but usually cheap and plentiful in the areas where malaria still exists. Probably one of the most vexing of manpower problems was found in the Pacific area where sprayers were once supplied requiring a thrust of as much as 120 pounds to depress the pump handle. The laborers, seldom over five feet in height with an average weight of 95 pounds, found it a bit difficult, to say the least, to exert that downward thrust of 120 pounds. To meet this general problem, containers of carbon dioxide and "Freon" have been proposed and produced for the pressurization of sprayers, but the economics and logistics of this method make it impractical for malaria eradication. Perhaps a partial or total solution may be found by American and European workers who are reported to be developing other chemical methods of pressurization, such as the use of burnt gases.

A device which passes water suspended insecticides repeatedly through four nozzle tips under test, thus eroding the nozzle orifice.



Insufficient agitation of insecticide suspensions, (most frequently used form) is a particular fault of the compression sprayer. Devices have been designed to agitate the liquid by means of a paddle, powered by a counterbalanced weight which moves with changes in acceleration of the mass. Unfortunately movement of the sprayer is too small to provide sufficient power. Where insecticide powders with notably poor suspensibility must be used, recourse has been made to the stirrup pump (12) and the so-called force pump. The stirrup pump is a close relative of the bucket pump used for civil defense fire fighting during the last war and has, indeed, frequently been that exact war surplus item. Its advantage in addition to its low cost, is that the insecticide is held in an open container where it can be agitated by a paddle, or by hydraulic jet from the pump itself. Two men are required, one to operate the pump and paddle, one to apply the spray, a disadvantage in terms of labor costs. One experienced proponent of this system commented that it is

(*Turn to Page* 102)

Flow Evaluation of Aerosols

By L. Cohen, R. J. Meyer and J. S. Wolff*,
B. F. Goodrich Chemical Co.
Avon Lake, O.

COMMERCIAL interest has developed during the past several years in the dispensing of relatively high viscosity food, cosmetic, pharmaceutical, and chemical specialty products from inert-gas-pressurized packages. In the aerosol field of packaging a physical change in the dispensed material, such as foaming, aspirating, or atomization, is normally desired. The objective in inert-gas-propellant packaging is usually to dispense the product in a physical form that is familiar to the consumer from experience with other packaging methods. For example, the sauce or topping for a food product should exhibit the rheological behavior normally associated with a condiment when applied by spoon from a bottle. A toothpaste applied from a pressurized package should be identical in appearance and behavior on the brush bristles to a paste extruded from a collapsible metal tube or from a squeeze-type plastic container.

The choice of valve, container, and compressible gas for any specific formulation may vary widely depending upon the application as well as the physical and chemical nature of the product. Specific details concerning design of pressure-packaged systems have been discussed in the literature (1). Chemical formulation of the product will be modified only to obtain the necessary rheological behavior since the propellant is inert with respect to the product. Consequently, a study of rheological behavior is of unusual importance in the design of new formulations to be marketed in pressure packages. The market acceptability of the product can often be assured by the presence of a minor ingredient such as a thickening agent. How the rheological behavior of a complex formulation in a pressurized package can be best characterized is the subject of this discussion.

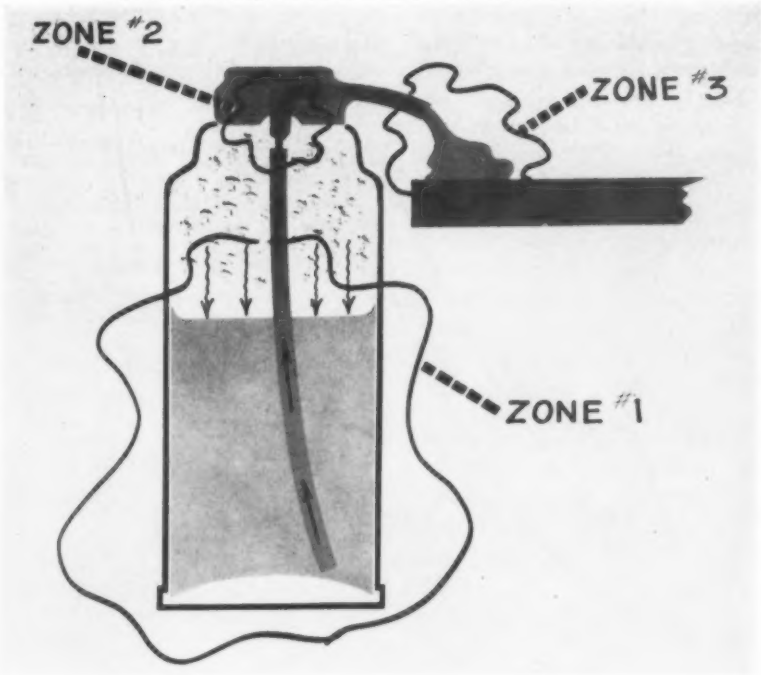
The Rheological Problem

The pressurized package is a difficult and unique problem for rheological study largely because of the basically incongruous conditions existing in the three zones of the system illustrated in Figure 1.

In Zone 1 the ratio of chamber diameter to product volume transmitted is very high, resulting in a very low shear rate, perhaps from one to ten inverse seconds. In this zone it is desired that the gas act as a piston on the entire surface of the formulation as to prevent cavitation and premature release of the gas. Low viscosity is, of course, desirable at this point.

In Zone 2 the product is subjected to an extremely high shear rate as it is extruded through the small diameter valve orifice. The shear rate in this zone may be in the range of 1000 to 10,000 inverse seconds. Sufficiently low viscosities at high rates of shear are

Figure 1. Rheological zones in an inert gas pressure package



*Paper delivered at the 45th midyear meeting of the Chemical Specialties Manufacturers Association, Drake Hotel, Chicago, May 19, by Mr. Wolff, who is field sales manager, general chemicals, for B. F. Goodrich Chemical Co., Cleveland 15, O.

desirable so that the product may extrude without excessive pressure. The instantaneous high shear rate applied to the product in this zone can result in thixotropic breakdown of the formulation so that the viscosity is too low at the point of discharge.

The lowest shear rate is in Zone 3 or the point of delivery. After deposition, only the forces of gravity affect the tendency of the material to sag or flow. In this zone, conditions suddenly permit flow patterns characteristic of other packaging methods. The shear rate will normally be less than one inverse second.

The rheological problem, therefore, includes the measurement of the apparent viscosity over a very wide range of applied shear rates as well as determining the effect on the product, after deposition, of an instantaneously applied high shear rate. The effects of applied shear rate will constitute a real problem in almost all formulations since the occurrence of compounds exhibiting Newtonian flow behavior will be rare.

A common method of evaluation has been loading formulations into pressure packages and determining efflux rates by discharging the contents. This unwieldy method ignores rheological procedures which can provide a sound technical basis for formulation.

Selection of a method of evaluation should provide for use of inexpensive equipment of sufficient accuracy for development work, but simple and rugged enough to be used for production control purposes. We believe the Severs extrusion rheometer, supplemented by the Brookfield rotational viscometer, meets these requirements and is ideally adapted to this evaluation.

The Brookfield rotational viscometer measures the torque required to revolve a spindle through a sample at a given rate of speed. The Brookfield RVT spindle has a range of speeds from 0.5 to 100 rpm. An increase in RPM produces a corresponding increase in rate of shear. The torque at any constant spindle speed is indicated by dial reading of from zero to 100 and is a measure of shearing stress. Characteristic curves for a sample are obtained by plotting the rate of shear (spindle RPM) versus shearing stress (dial reading) as in Figure 2. The three types of flow curves represented here will demonstrate the major types of flow properties occurring in the formulations under discussion.

A Newtonian liquid is characterized by flow that is directly proportional to shearing force and is depicted as a straight line through the origin. Most pure liquids or solutions of low molecular weight polymers exhibit Newtonian flow properties. Materials characterized by a pseudoplastic flow curve flow more readily as the rate of shear is increased to give a curve convex to the shearing stress axis and through the origin.

Apparent viscosity values can be calculated for any shear range as demonstrated in Figure 2 with the plastic flow curve which shows that viscosity for any range of shear is proportional to the slope of the flow curve in that area of shear.

By contrast, materials exhibiting plastic flow characteristics will flow only after the applied shearing stress exceeds a critical minimum value. This minimum shearing stress is designated as yield value and is measured as the intercept on the shearing stress axis. It will be noted that the plastic flow curve is characterized by a rapidly increasing apparent viscosity as the rpm is decreased. Although the absolute shear stress at zero rpm cannot be measured, extrapolation of the curve to zero rpm results in an estimated yield value which is acceptable for comparative purposes. This is approximated in the case of the Brookfield RVT instrument (3) by

Brookfield Yield Value=

$$\frac{\text{(Apparent Visc. @ 0.5 rpm} - \text{Apparent Visc. @ 1 rpm)}}{100}$$

Figure 2. Types of Flow

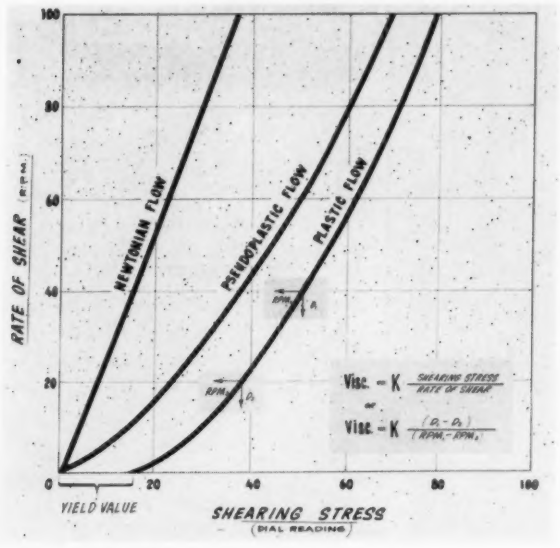
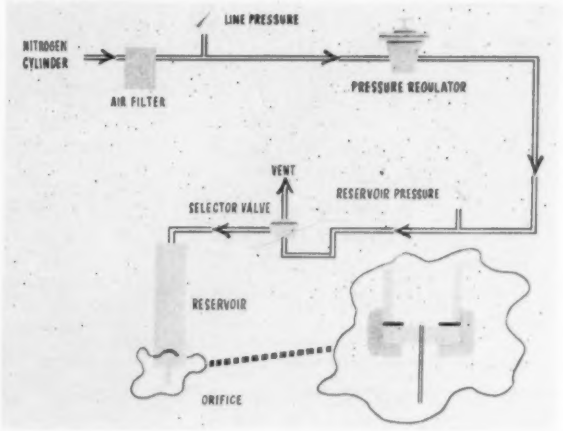


Figure 3. Schematic diagram of Severs extrusion rheometer



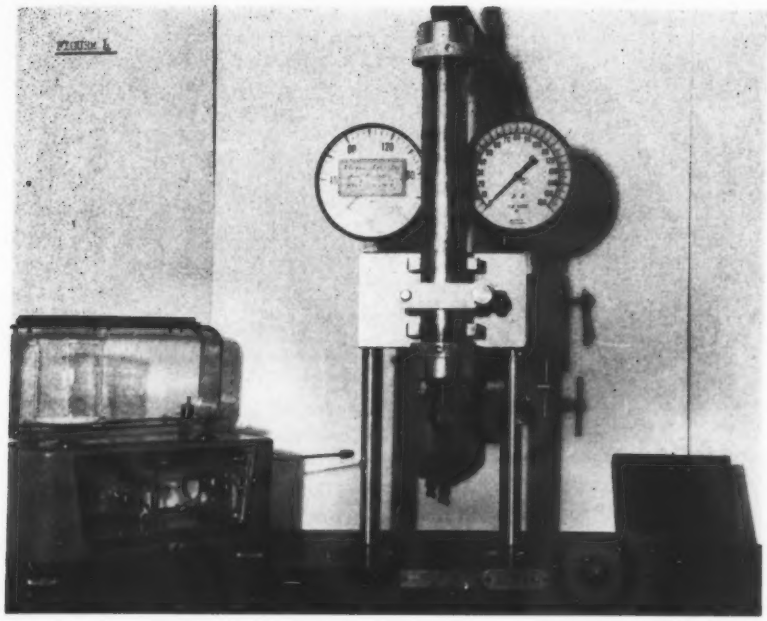


Figure 4. Severs extrusion rheometer in use at development center of B. F. Goodrich Chemical Co., Avon Lake, O.

In evaluation of pressure-packed formulations, the Brookfield instrument is useful in the range of the very low shear rates of Zone 1 and Zone 3 without causing any breakdown of the formulation. It also indicates the apparent yield value of the product. This is particularly valuable as a means of selecting a formulation which will be "non-pourable" in Zone 3. The Brookfield viscometer must be used with auxiliary equipment which can accurately measure the shearing stress at the high shear rates present in the valve as well as instantaneously shear the sample. For this purpose the Severs extrusion rheometer was chosen.

Severs Extrusion Rheometer

An extrusion rheometer is basically a pressurized viscosity cup with a cylindrical orifice which can measure viscosities at widely varying rates of shear by changing the pressure and the orifice diameter. The Severs extrusion rheometer was developed by E. T. Severs at the Mellon Institute of Industrial Research and has found common use in the plastics industry in the rheological analysis of polyvinyl chloride resin plastisols for use in high speed coating of cloth and paper[2]. Figure 3 is a schematic diagram of the Severs instrument. The ease of operation and cleaning makes this instrument unusually adaptable for control testing as well as an accurate research tool. Model A-100*, which is normally used in plastisol evaluation, operates over a pressure range from atmospheric to 100 psi gas pressure. The operating range of this instrument corresponds with the normal range of pressure packaging. A can is normally filled with 100 psi nitrogen and has approximately 20 psi gas pressure remaining when the can is almost empty.

Figure 4 is a photograph of the instrument in use at the Development Center of B. F. Goodrich Chemical Co. at Avon Lake, Ohio.

In operation the sample is placed in the reservoir, the desired pressure applied to the reservoir, and the weight of sample efflux measured for a specific time. Shearing stress, shear rate, and apparent viscosity (in case of a Newtonian fluid) are calculated in our Development Center by means of the following basic equations which have been simplified by the use of orifice constants. In the case of a non-Newtonian fluid, the apparent viscosity must be determined graphically or analytically as the slope of a Shear Rate versus Shearing Stress plot at any desired shear rate.

*Castor Laboratory Equipment Co., Pittsburgh 34, Pa.

Table 1. Severs Viscometer Calculations

Shear Rate $= R = \frac{(K_1)\ (E)}{d}$ Sec.$^{-1}$

where $K_1 = \frac{4}{100\ r^3}$

Shearing Stress $= S = K_2 P$ Dynes/cm.^{2}

where $K_2 = \frac{6.89 \times 10^4 r}{2L}$

Viscosity* $= V = \frac{K_3\ d\ P}{E}$ Poises

*Newtonian

where $K_3 = \frac{6.89\ r^4 \times 10^6}{8L}$

E = measured efflux rate (gm/100 sec.)
d = density of sample in gm/cc
r = radius of Severs Orifice
P = pressure in psi
L = length of orifice = 5 cm.

Valve Calibration with SER

The internal orifice used in pressure-packaging valves is normally complex in shape and in some cases divided into three passages within the stem. It would be extremely difficult to calculate the shearing rate on a product passing through such a system. It is a simple matter, however, to calibrate these valves in the Severs instrument by use of a Newtonian fluid. With these data we can then select a Severs orifice diameter which will provide a shear rate on a sample equivalent to the shear rate produced by the valve. This orifice will also supply an instantaneous shear rate identical to that experienced in the pressure package rather than the normal continuous high-shear rate applied by other viscometers.

The first step in this calibration procedure was to determine the viscosity of the glycerine used as the calibration fluid. C.P. grade glycerine was placed in the

Table 2. Newtonian Fluid (Glycerine) Calibration with the Severs Extrusion Rheometer

Pressure	Efflux Rate	Shear Rate	Viscosity
(psi)	(Gm./100 sec.)	(Sec.-1)	(poise)
10	57.9	1,235	4.40
30	165.3	3,525	4.62
50	263.8	5,562	4.83
70	385.1	8,212	4.63
90	510.7	10,891	4.49

Table 3. Calibration of Pressure Package Valves with Glycerine

Valve Type		Glycerine Efflux	Pressure	K_3
Body	Stem	(Gm./100 Sec.)	(psi)	
0.018"	0.018"	34.5	100	1.27
0.025"	0.018"	36.6	50	2.69
0.080"	0.018"	34.6	20	6.35
0.080"	0.030"	76.5	10	28.1
0.080"	3×0.040"	134.3	10	49.5

Note the use of the instrument constant (K_3) to calibrate the valves.

instrument and the efflux rate determined at 10 psi pressure increments from 10 to 90 psi. These data are summarized in Table 2.

The shear rate was determined from the experimental data using the formula in Table 1. The value of K_1 was calculated from the radius of the orifice.

$$\text{Shear Rate} = \frac{(K_1)\ (\text{Efflux Rate})}{\text{density}}$$

$$K_1 = \frac{4}{100\ \pi\ r^3}$$

The third formula in Table 1 was used for calculating the viscosity. The constant was determined by using the physical dimensions of the orifice in the equation for K_3.

$$\text{Viscosity} = \frac{(K_3)\ (\text{density})\ (\text{pressure})}{\text{Efflux Rate}}$$

$$K_3 = \frac{(6.89)\ (\pi)\ (\text{radius})^4\ (10^6)}{8\ \text{Lengths}}$$

Note that through this range of applied pressures with a 0.156 cm. orifice, the shear rate varies from 1,235 inverse seconds to 10,891 inverse seconds with no appreciable change in viscosity indicating Newtonian-type flow. For use in subsequent calculations, the average viscosity of the glycerine was found to be 4.61 poises.

Each of the pressure-package valves in turn was inserted into an adapter prepared so that the Severs orifice might be physically replaced with the valve. It was necessary to use a different applied pressure on each size valve in order to obtain a reasonable amount of glycerine for weighing. Since a Newtonian fluid was selected for calibration purposes, the actual pressure used is of no importance. A needle-nosed pliers was used to hold the valve fully open during the calibration run. Four samples of each valve style were run in duplicate to insure accuracy. In the 20 valves tested, representing five valve styles, only one valve had to be discarded as defective or unrepresentative of its class. Table 3 summarizes the calibration of the types of valves.

This constant (K_3) was determined experimentally in the case of the pressure package valves by the following relationship since the viscosity and density of glycerine are known constants at the temperature of operation:

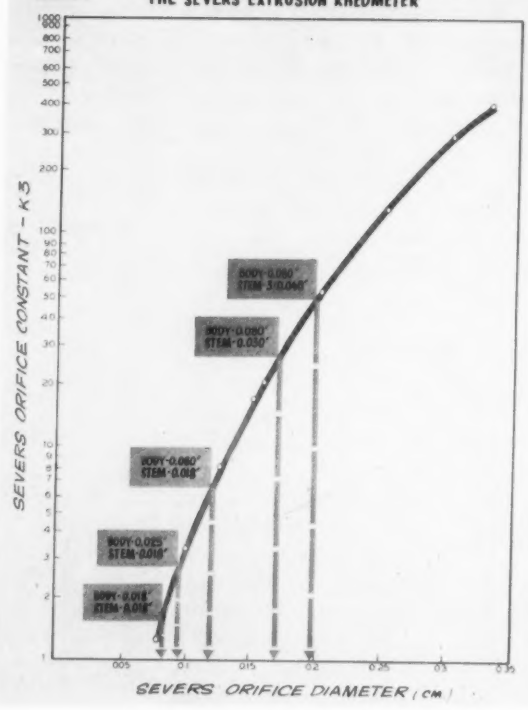
$$K_3 = \frac{(\text{Viscosity Glycerine})\quad(\text{Efflux}/100\ \text{Sec.})}{(\text{Density Glycerine})\quad(\text{Pressure})}$$

By design the length of the standard orifice used in the Severs instrument is five cm. Therefore, we can plot a curve representing the Severs constant (K_3) as a function of the Severs orifice diameter. This Severs orifice curve has been plotted in Figure 5 and the specific values of (K_3) experimentally determined for each style valve superimposed upon the curve. We may now relate each valve style to an "equivalent" cylindrical orifice with a length of five cm. and a diameter as indicated by the intercept on the abscissa.

In this manner a pressure valve with a 0.080 inch body and a 0.030 inch stem has an "equivalent" diameter to a Severs orifice with a 0.168 cm. diameter. A series of Severs orifices could be fabricated with the necessary physical dimensions to provide for a complete rheological study of pressure-packaged formulations with any style valve. For demonstration purposes the standard Severs orifice with a 0.156 cm. diameter has been

(*Turn to Page* 101)

FIG. 5 CALIBRATION OF PRESSURE PACKAGE VALVES IN THE SEVERS EXTRUSION RHEOMETER



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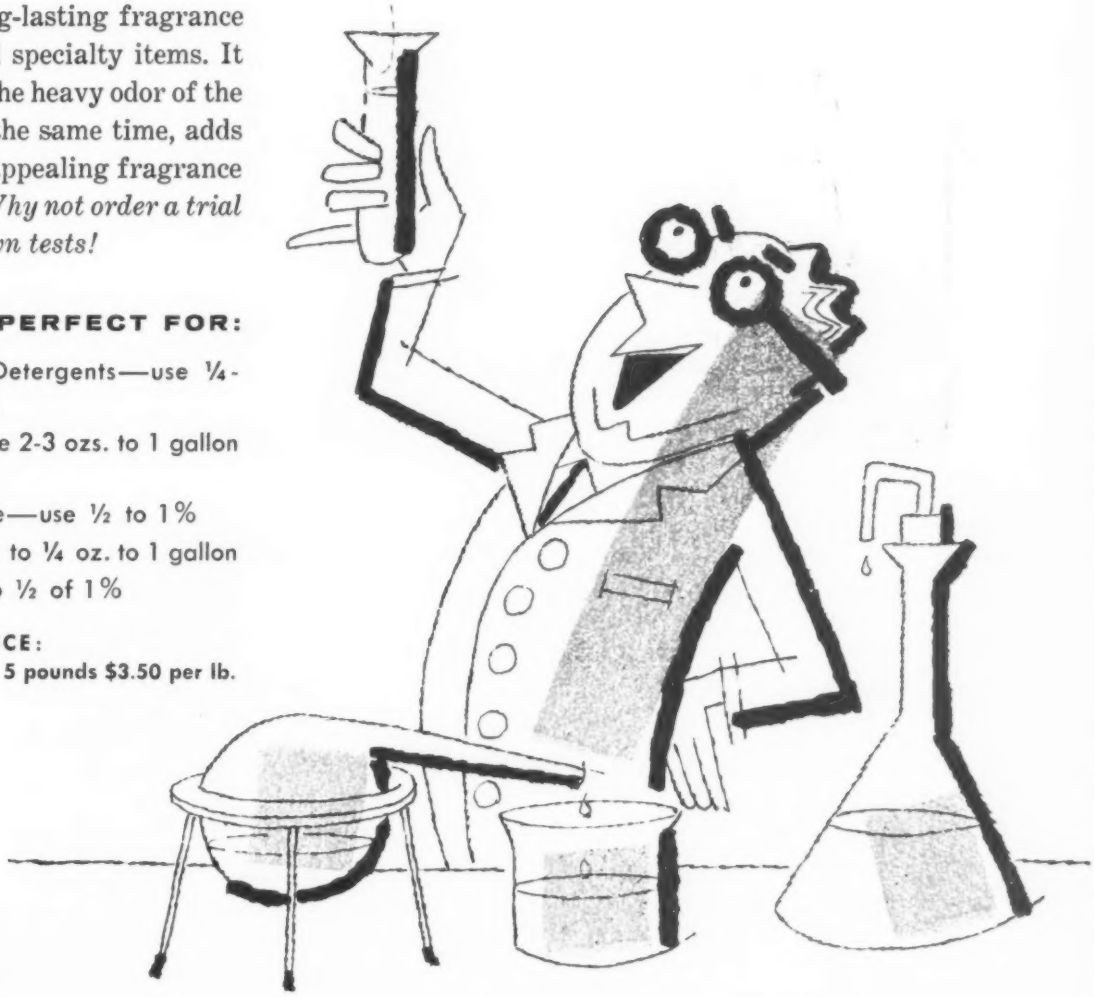

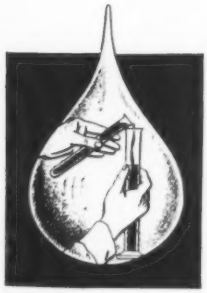

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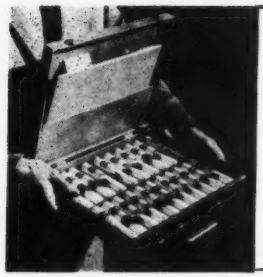

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Factors affecting

Floor Polish Gloss, Viscosity

By Bernard Berkeley & Daniel Schoenholz*
Foster D. Snell, Inc.,
New York

THE study described in this paper is one of a series based upon work sponsored by the Grasselli Chemicals Department of E. I. du Pont de Nemours & Co. We do not think that the work supplied definitive answers to the questions posed. However, we do believe that it serves to clarify the parameters of the problem and in some cases to suggest new tools and study methods which may have supplementary value. It is hoped that these papers will provoke thought and study by others in the interests of supplying more basic understanding of what has been a largely empiric field.

An investigation of the factors affecting gloss of floor polishes was undertaken in order to increase our understanding of how water emulsion polishes improve the appearance of flooring surfaces. The study was initiated as part of a more general investigation involving the use of colloidial silica in household floor polishes.

Some of the factors which were studied included viscosity during drying, effect of substrate smoothness on final gloss, wetting characteristics of flooring surfaces, film clarity of polishes and refractive index.

The immediate purpose of this paper is to present the data relating to viscosity characteristics of a number of floor polishes. In succeeding papers, we shall cover the other factors and attempt to correlate them to gloss determinations.

In considering the factors that influence gloss, we assumed that a water emulsion polish consists of a dispersion of particles of varying size in a serum composed of salts, surface-active agents, film

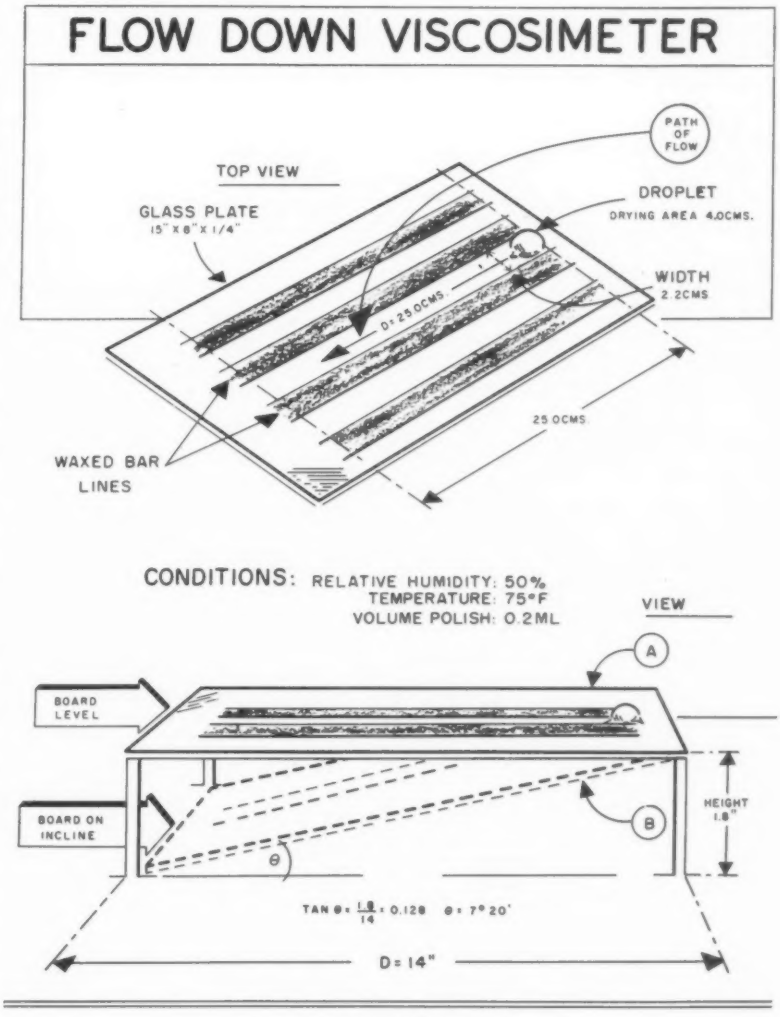

FIGURE I.

*Paper presented during 45th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 19, 1959.

formers, etc., dissolved in water. As the volatile portion of the dispersion evaporates, the particles are drawn together and gradually lose their mobility. Fluidity decreases approximately in proportion to the increase in solids and in response to the viscosity characteristics of the remaining serum.

It was believed that the viscosity behavior of the polish on drying influences the gloss of the dried film. Two contradicting possibilities suggested themselves in this regard. In one case, it was argued that "hold out" of film—thought to be a positive contribution to gloss—was dependent on the polish rapidly acquiring high viscosity. The other view suggested that increased duration of film mobility permitted the closer packing of wax particles and therefore presented a smoother surface when completely dry.

A simple means of estimating the viscosity change of a floor polish during drying was sought. We decided to limit ourselves to near actual drying conditions, i.e., evaporation of thin films with little or no agitation. The method that was ultimately developed encompassed both these elements.

Description of Test Method

In essence, the procedure consisted of air-drying standard volumes of wax polish on horizontal glass plates, tilting the plates to a set angle at selected time intervals, and measuring the time required for the advancing edge of the drop to flow a prescribed distance over a channeled path. The flow time was assumed to be a relative measure of viscosity.

Circles, 4.0 sq. cm. in area, were inscribed on glass plates, 15 x 8 x 0.25 inches, approximately one-half inch from the edge of the small arm of the rectangle. Exactly 0.2 cc. of each polish was spread over the area of the circle to yield a coverage of approximately 81.5 square feet per gallon, which is roughly 16 times the normally applied wet film thickness of a single application.

Angle of Inclination

The angle of inclination of the glass plate was varied from five to 10 degrees in steps of 2½ degrees in order to determine the optimum flow conditions. It was found that at the lower angle the flowing droplet moved in an erratic line and gave widely varying viscosity readings. At the higher angle, flow-down was too rapid to give significant viscosity differences among various floor polishes. The optimum angle of inclination was found to be near 7½ degrees, which gave a minimum of wavering and significant readings. An angle of 7⅓ degrees was calculated from the relationship between height and distance of the arms of the right triangle formed by the inclined plane.

Channeling of Droplet

In order to help channel the flowing droplet in a straight line and reduce erratic edge motion, consideration was given to coating the path of flow with a surface-active agent. When the line of flow was coated with surfactant such as "Igepal CA 630"[1] or "Triton X-100"[2], the moving drop ran down very rapidly and viscosity values varied greatly. Consideration was then given to applying low energy guide lines on either side of the desired flow path. These lines were initially drawn with paraffin wax sticks and later with a plastic microcrystalline wax. The latter was found to be easier to handle and could be applied more uniformly to the surface. Viscosity measurements made in this manner gave relatively satisfactory results. The channel between the guide lines was set at 2.2 cm., which was the diameter of the droplet drying area.

[1] Registered trade name Antara Chemicals Division, General Aniline & Film Corp., New York

[2] Registered trade name Rohm & Haas Co., Philadelphia

Preparation of Surface

Glass plates were prepared by a cleaning program which included detergent wash, water rinse, chromic acid soak, and water rinse. Only those specimens showing no water break during the last rinse qualified for use in the test. Following an approximate drying period, guide lines were drawn on either side of the flow path with a block of plastic microcrystalline. The panels were then conditioned at 75° F. in preparation for their use.

Test Procedure

The viscosity tests were performed in a controlled atmosphere set at 75° F. and 50 per cent relative humidity. Tests were run on polish samples previously conditioned at 75° F. for at least six hours. A syringe was filled to the 0.20 milliliter mark and this quantity of polish delivered onto the glass plate mounted in a horizontal position on two wooden blocks

Table I

Polish Type	Designation	Gloss Per Mil. at 60° on red asphalt	Kinematic Viscosity at 75°F. (CSTKS)
High Resin	A	41	1.5345
High Resin	B	36	1.7364
High Resin	C	34	1.7108
High Wax	D	26	1.8498
High Wax	E	22	1.8922
High Wax + Silica	F	33	2.2281
High Wax + Silica	G	32	1.8520
Emulsion Polymer	C-37	39	1.8922
Emulsion Polymer	C-37A	26	1.8918
Emulsion Polymer	C-37B	27	1.8221
Unwaxed Surface		19	—

resting on a leveled board. The wax droplet was forced with a glass "cat's whisker" to spread to the perimeter of the circled area etched on the plate. Viscosity was then measured at the different time intervals of drying by removing one of the mounting blocks and carefully lowering the bottom end of the glass plate onto a slot fixed at a distance to give an angle of 7⅓ degrees to the horizontal. The time of flow of the partially dried wax droplet down the inclined plane for a distance of 25.0 cms. was used as a measure of viscosity.

Description of Polishes

A variety of "self-polishing" floor waxes was selected from our product shelves which represented popular types of commercially acceptable products as well as unproved laboratory samples. A brief description of the compounds is given below:

High Resin Content Polishes—The solids content of these polishes consists of 60-80 per cent shellac and/or synthetic alkali-soluble resin and 20-40 per cent wax.

Marking	% Solids
A	12.9
B	12.6
C	14.4

High Wax Content Polishes—These contain between 60-90 per cent of wax and wax-compatible resin solids with 10-40 per cent of alkali-soluble resins.

Marking	% Solids
D	12.0
E	13.6

High Wax Plus Colloidal Silica—These consist of approximately 45--50 per cent wax emulsion, 30 per cent silica, and the balance emulsion polymer and/or alkali-soluble resin.

Marking	Solids	% SiO_2
F	16.0%	5.4
G	12.0%	4.1

Emulsion Polymer Floor Polishes—These would normally consist of blends of 50-80 per cent emulsion polymer, 10-20 per cent alkali-soluble resin and 10-20 per cent wax emulsion. The experimental compositions actually used are somewhat richer in wax content and contained "Ludox"[3] colloidal silica.

Marking	% Solids
C-37	15.0
C-37A	15.0
C-37B	15.0

Experimental Results

Gloss values and kinematic viscosities — Concurrent with the determinations of viscosity on drying, 60 degree gloss values were obtained for each polish on a relatively porous asphalt surface. The assumption was that the influence of viscosity and hold-out might be most noticeable on a rough surface.

The kinematic viscosities of each polish at 75°F. were also determined as reference data. It will be shown later that good correlation exists between the flow-down viscosity method and kinematic viscosity by the Ostwald method.

The data obtained are shown in Table I.

Flow Down Viscosity Data

Viscosity data were obtained for three experimental formulations plus a number of commercially available wax products. Detailed data on the experimental polishes are given in Tables II, III, and IV to illustrate the variations in test results inherent in the procedure. (A summary of the data in these table is shown in Figure 4.)

The detailed data presented in Tables II through IV show the individual values, median value, standard deviation of the individual values, and standard deviation of the median value. (For the sake of simplicity, Figure 4 shows only the median values and the standard deviations of the median.)

The median rather than the arithmetic mean was used in order to minimize the effect of gross

(*Turn to Page* 83)

[3]Registered trade name E. I. du Pont de Nemours & Co., Wilmington, Del.

Table II. Flow seconds at different drying intervals
(experimental floor wax formula C-37)

Time Period	0 Min.	1 Min.	2 Min.	3 Min.	5 Min.	10 Min.	12 Min.
	72.4	68.0	62.6	65.8	82.4	80.0	No flow
	95.8	66.4	62.0	76.2	72.0	76.0	
	72.8	68.6	62.6	65.0	70.0	77.3	
	55.2	71.4		66.2	70.4		
	70.0	72.0					
	73.0	70.6					
Median	72.6	69.6	62.6	66.0	71.2	77.3	
Standard deviation of individual values	16.2	2.2	0.4	5.5	5.9	2.4	
Standard deviation of median	6.5	0.9	0.2	2.7	2.9	1.4	

Table III. Flow seconds at different drying intervals
(Experimental floor wax formula C-37A)

	0 Min.	1 Min.	2 Min.	3 Min.	5 Min.	7 Min.	8 Min.
	71.6	82.2	77.8	64.6	75.0	119.6	No flow
	70.0	55.8	75.4	74.2	65.0	100.0	
	77.0	84.3	75.0	70.0	77.2	98.8	
	65.4	80.0	74.2	73.4	76.4	101.6	
	70.2	65.0			76.6		
Median	70.2	80.0	75.2	71.7	76.4	100.8	
Standard deviation of individual measurements	5.0	12.3	1.8	4.7	5.2	9.1	
Standard deviation of median	2.2	5.5	0.9	2.3	2.3	4.1	

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errors of measurement.

An estimate of precision can be gained by reference to the standard deviations of the medians which range from ±0.2 to ±6.5 seconds. For quick calculations, it can be assumed that any difference between two medians is significant, at least P=0.67, if the difference is greater than the sum of the standard deviations of those medians.

Inspection of the drying curves for C-37, 37A and 37B shows a definite similarity between 37A and 37B. The viscosities of both products increase immediately on drying and then decrease before rising to a point of no flow. Formula C-37A becomes too viscous to flow in between seven and eight minutes; C-37B takes eight to nine minutes to reach maximum viscosity; and C-37 becomes immobile in between 10-12 minutes.

In order to illustrate the major differences in composition among the three formulations, an abbreviated relationship is shown in Table V.

Tentative conclusions from these data were: substitution of colloidal silica for polystyrene dispersion (compare 37 to 37B) resulted in reduced initial viscosity, more rapid gelling time and lower gloss; altering the ratio of wax to polymer (compare 37B to 37A) in favor of more polymer, further lowered the time during which the polish remained fluid. The differ-

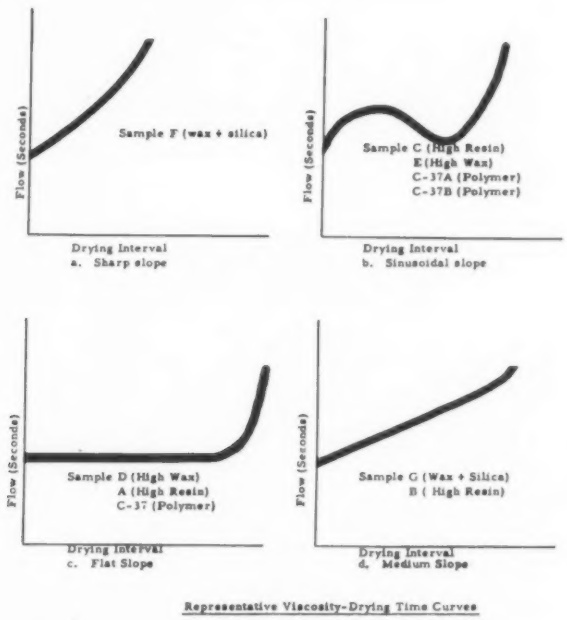
(*Turn to Page* 101)

Table IV. Flow seconds at different drying intervals
(Experimental floor wax formula C-37B)

	0 Min.	1 Min.	2 Min.	3 Min.	5 Min.	7 Min.	8 Min.	9 Min.
	55.0	73.8	98.6	74.4	65.0	65.2	104.0	No flow
	67.0	70.0	78.6	76.0	67.4	72.4	105.4	
	83.2	74.0	79.0	75.6	71.0	76.2	103.0	
	67.2		79.6		77.6	70.0		
	66.4				78.2	84.0		
					78.8	84.5		
						85.2		
Median	67.0	73.8	79.3	75.6	74.3	76.2	104.0	
Standard deviation of individual measurements	12.1	2.4	9.8	0.9	5.5	7.4	1.4	
Standard deviation of median	5.4	1.4	4.9	0.5	2.2	2.8	0.8	

Table V. Composition of experimental formulations

	Parts by Volume		
	C-37	C-37A	C-37B
Carnauba wax emulsion, 15 per cent solids	40	32	40
Plasticized modified polystyrene, 15 per cent solids	50	42	34
"Ludox" colloidal silica, 15 per cent solids	—	16	16
Ammonia-cut resin, 15 per cent solids	10	10	10
Flow seconds at 0 minutes	72.6	70.2	67.0
Time to reach "No Flow"	10-12 Min.	7-8 Min.	8-9 Min.
Gloss per mil at 60° on red asphalt	39	26	27



Representative Viscosity-Drying Time Curves

Figure 3

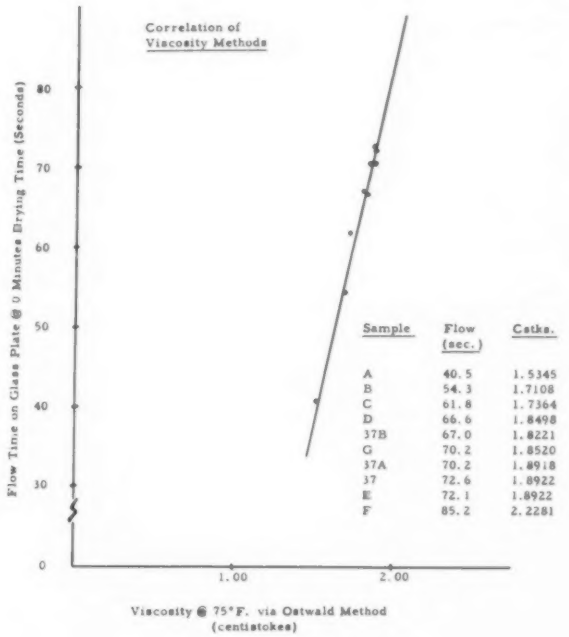


Figure 4

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Effects of Water Quality on

Auto Cooling System Corrosion

Glycol in Antifreeze Solution

By M. A. Boehmer and J. W. Compton*
Wyandotte Chemicals Corp.
Wyandotte, Mich.

Part II

THE corrosion is recorded as a function of the change in resistance of the exposed metal probe (14, 15). The instrument used to record the resistance change was a "Corrosometer," manufactured by the Crest Instrument Co., 11808 S. Bloomfield, Santa Fe Springs, Calif. Probes of various metals can be obtained from the above supplier or made in the laboratory to suit specific needs. The steel probes used were catalogued as 1011T-4X1 by the Crest Instrument Company.

If desired, the pump plate and top plate can be easily modified to test various cooling system components. The eight inch elbow can be cast in a variety of alloys from a standard foundry pattern.

The fleet test corrosion specimen holder is shown in Figures 7 and 11. The device is mounted in the top radiator hose of the test stand. This holder is also used on the simulated service test stand in addition to specimens mounted in the eight-inch cast iron reservoir. Temperature control was provided by the Fenwal thermo-regulator actuating a relay which powered the 1000 watt copper immersion heater. The arrangement of the test stand components is illustrated in Figures 7 through 9.

(*Turn to Page* 89)

Table IV. Simulated Service Corrosion Data

	Losses In Milligrams Per Specimen (+ is a Gain)								
	45% Solutions								
Antifreeze	**A**	**A**	**A**	**B**	**C**	**D**	**D**	**E**	**F**
Water Used	2	2	3	2	2	2	3	2	2
Hours on Test Stand	750	2500	1500	750	750	750	1500	750	750
Average of 2 Coupled Sets									
Steel	— 1.0	— 1.3	— 9	— 1	+ 16	— 1	— 65.4	+ 1	— 4
Cast Iron	+ 2	— 0	— 8	+ 1	+ 4	— 2	— 7.5	—168	— 27
Aluminum	— 6	— 90	— 31	— 10	— 41	— 66	— 43	—126	— 69
Insulated Spool									
Steel	— 0	— 0	— 6	— 1	— 0	— 1	— 12	— 17	— 4
Cast Iron	+ 2	— 5	— 8	— 7	+ 4	— 0	— 14	— 26	— 10
Aluminum	— 5	— 96	— 37	—113	— 25	+ 12	— 70	— 79	— 81
Specimen Holder									
Steel	— 1	— 0	— 1	— 4	+ 4	— 8	— 7	+ 3	— 2
Cast Iron	+ 1	— 1	— 2	+ 6	+ 3	— 4	— 11	— 80	— 18
Aluminum	— 9	—107	— 22	— 27	— 30.1	— 65	— 76	— 77	— 57

Figure 7. Apparatus for simulated testing of antifreeze.

*Paper presented at the 45th midyear meeting, Chemical Specialties Manufacturers Ass'n, Chicago, May 19, 1959.

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(*From Page* 85)

Test Method

The Simulated Service Method of corrosion testing calls for preparation of the corrosion specimens as described in the ASTM D-1384-55T method. After the specimens were weighed to 0.1 milligrams, they were assembled on the corrosion spools as shown in Figure 8. The bottom six specimens were insulated from each other while the top 12 specimens are coupled in ASTM order. The specimens in the top radiator hose are also coupled. The brass specimen on the insulated portion of the spool has a solder spot (½ inch in diameter) attached. The corners of the solder specimens were bent to prevent any movement on the spool. The hole in the solder specimen was also reamed oversize to make allowances for size reduction when the specimens and washers were drawn together on the test spools. The test stand was assembled with a freshly sandblasted cast iron elbow, water pump and mounting plates. New radiator hoses were used to connect the assembled reservoir with the degreased, water flushed and oven dried radiator.

After all connections were made tight the test stand was filled with tap water and pressure tested with a pressure tester for 14 psig. Any leaks were repaired at this time and then the water circulated for 10 minutes. The system was drained, refilled with hot tap water, and allowed to run for one to two hours with the copper immersion heater turned on. After retesting for leaks at 14 psig, the antifreeze test solution was installed and a pretested seven-pound pressure cap put in place. The pump speed was 1800 rpm and the control temperature was 180°F. An eight-ounce bottle was connected to the overflow pipe by means of a rubber hose. If a Corrosometer probe is used, a reading is taken when the temperature reaches 180°F. and repeated as often as required throughout the test. The test was run continuously on a seven-day week 24-hours-per-day basis for the desired test duration.

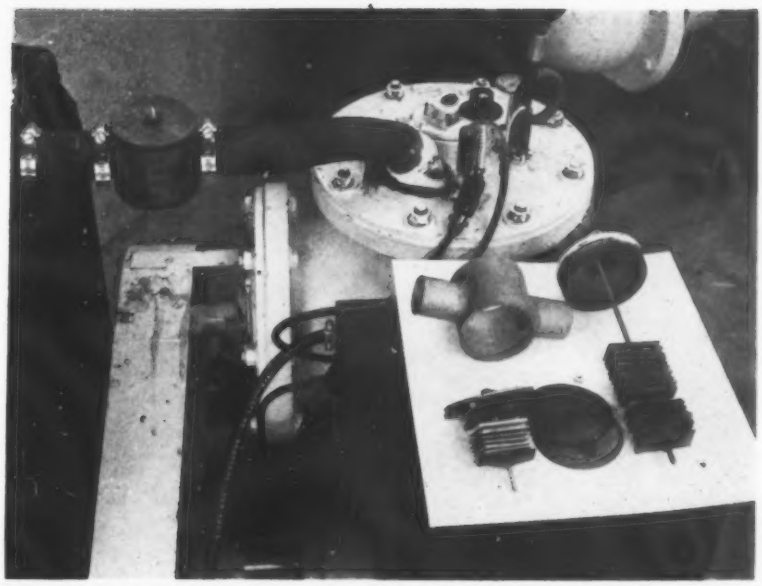


Figure 8. Corrosion specimens and top radiator hose specimen holder for simulated service corrosion testing.

Periods of 750 hours have given significant data, although some antifreezes have been tested for 3000 hours. On long term tests the six metal specimens mounted between the thermostat housing and top radiator tank are replaced at various intervals to determine the effective life of the inhibitors. Solution samples are taken at various intervals to record changes in pH, reserve alkalinity, freezing point and inhibitor concentration, as well as foaming characteristics. At the conclusion of the test, the weight losses of corrosion specimens are recorded. The apparatus is disassembled, examined, and photographed as required. Where rubber test slabs were included on the test spools, they were tested for durometer hardness, and percent volume change.

It has been reported that corrosion rates on glycol solutions are sometimes accelerated by low temperatures (16). Since the simulated test does not involve low temperatures, a set of ASTM test specimens can be placed in 150 cc of 45 per cent solution and stored at 0°F. to record these phenomena so that a representative test result is obtained.

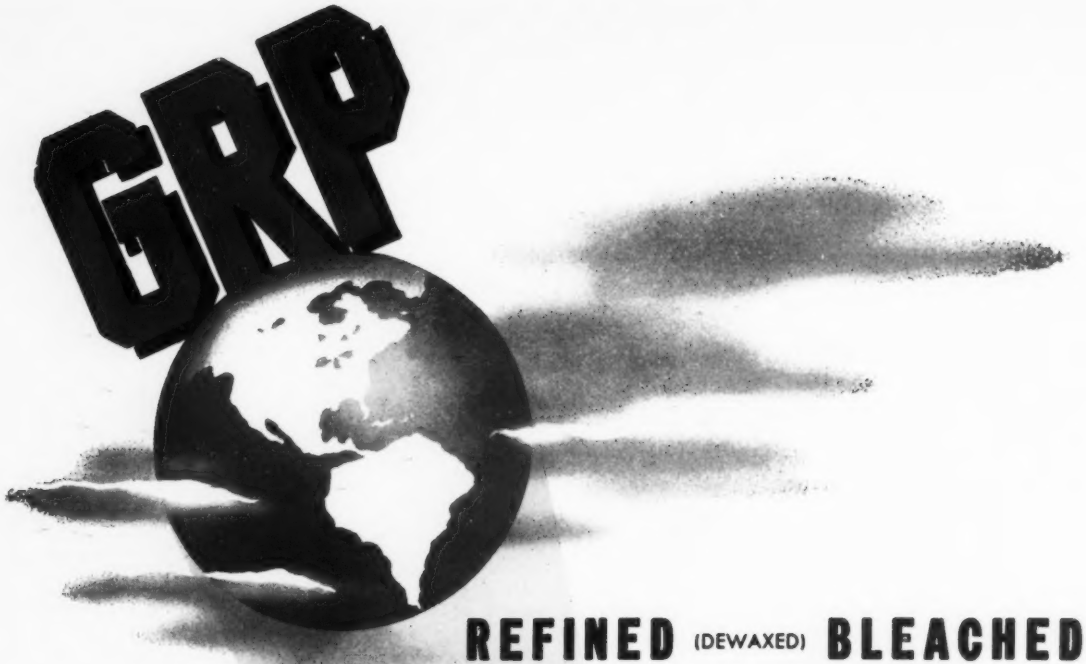
Results and Discussion

Originally we had planned to test only four antifreezes by the simulated service method but antifreezes E and F were also included to provide additional data on the major type of inhibitor in use today. These data are recorded in Table IV.

The 750-hour test results in Table IV indicate that antifreezes D, E, and F were similar in performance, each showing greater corrosion rates than A or B. Anti-

(*Turn to Page* 93)

Figure 9. Inspection of test standard components for corrosion attack.



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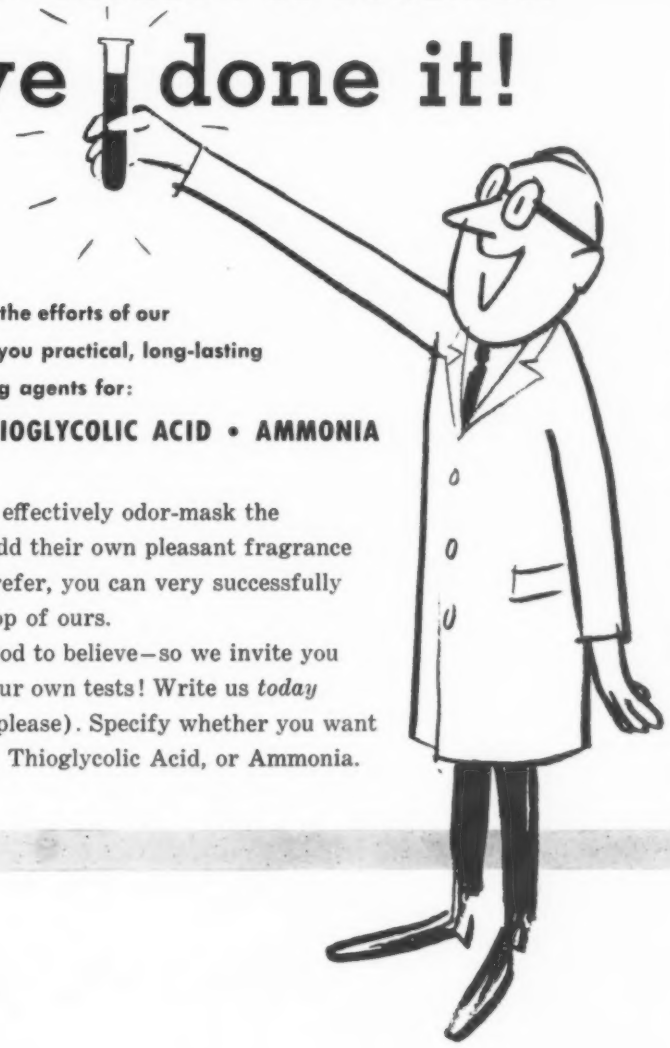

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(*From Page* 89)

freezes B and D gave unexpected aluminum corrosion on the insulated specimens, reversing the trend established by the coupled specimens. Antifreeze C contained an oil phase inhibitor which caused heavy gains on the ferrous metals.

Products A and D were then submitted to 1500 hour tests with the 100 ppm chloride-200 ppm sulfate test water. The expected increases in total corrosion were noted. However, the rate increase for A was greater than for D, although total corrosion for A was about 1/3 that of D. In order to determine the effects of test duration, antifreeze A was tested for 2500 hours using type 2 tap water. In this test, the protection of ferrous metals was maintained, but the rate of aluminum corrosion appeared to increase slightly as compared to the 750 hour tests.

Figure 9 represents the type of detailed examination which can be made after each simulated service test. The condition of the cast iron elbows correlated with corrosion specimen losses for A and E with type 2 water for 750 hours as noted in Table IV and shown in Figure 10.

Conclusions

The simulated Service Test permits the following conclusions:

1. Aluminum is corroded more than ferrous metals in all six of the antifreezes tested.
2. Antifreezes A and B give better corrosion protection than C, D, E and F.

Fleet Corrosion Test

Apparatus and Methods

To conduct these fleet corrosion studies on antifreeze solutions, a group of employee and company owned cars were used. These cars were equipped with the corrosion specimen holder shown in Figure 11. At the start of a test the cooling systems of the cars were drained, flushed, and carefully checked for leaks and the condition of the cooling system components. The cooling system was pressure tested and the thermostat control temperature checked. The weighed corrosion specimens and antifreeze solutions were installed and the mileage and data were recorded.

Figure 10. Corrosion of test stand components.

A solution sample was obtained during the first week of the test and at various times during the test. Mileage and data were recorded each time a sample was taken. If unexpected corrosion losses were obtained, the cooling system was examined for malfunctions and the test solutions for contamination.

Table V represents corrosion losses with the six antifreezes during the session's fleet test. The following summer the corrosion was recorded on a car using tap water coolant for five months. The corrosion rates in water would appear to be catastrophic for ferrous metals while aluminum was not so severely attacked. The corrosion losses on aluminum for antifreezes D, E, and F did not provide close checks in the duplicate determination. The ferrous losses with antifreeze D did provide suitable checks. However, Car No. 3 experienced some mechanical prob-

(*Turn to Page* 97)

Figure 11. Fleet test corrosion specimen holder.

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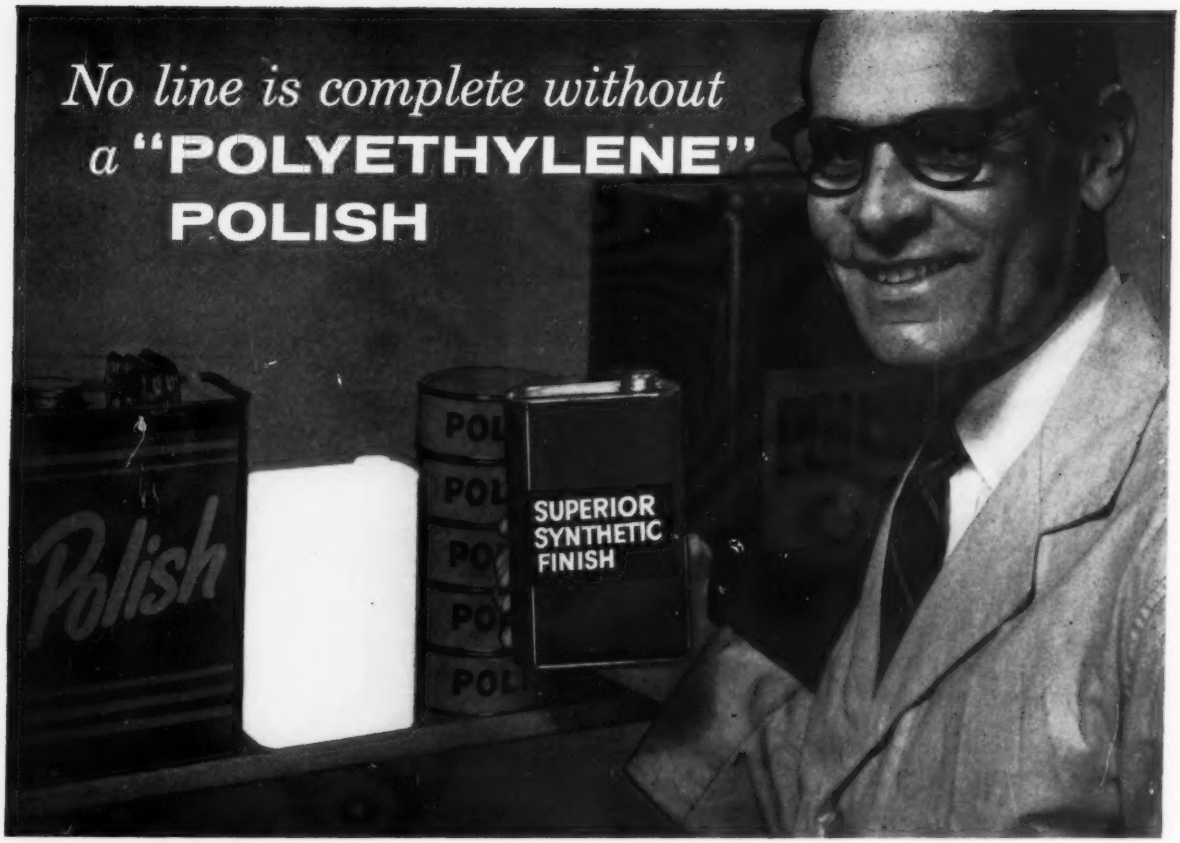

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Table V. Fleet Test Specimen Holder Corrosion Data (Detroit Tap Water)

Corrosion Losses In Milligrams Per Specimen. + Indicates a Gain													
Car No.	24	25	26	27	28	3	23	19	4	5	22	9	20
Year Mfr.	55	53	57	55	57	55	55	56	55	55	55	55	56
Mileage	10,000	4000	7000	5000	7200	10,500	5700	6209	5444	3444	8144	5855	6155
Antifreeze	A	A	B	B	C	C	D	D	E	E	F	F	Water Only
Steel	0.7	+ 0.2	+ 1.7	0.6	0	0	13	60	0.6	32	4	22	373
Cast Iron	+ 1.2	+ 3.2	+ 6.0	+ 6.0	+ 2.6	0	190	446	108	92	120	186	889
Aluminum	—19.8	+ 0.3	+ 2.1	—16	218	218	159	306	693	170	434	75	193

(*From Page* 93)

lems which accounted for the high corrosion losses. The test data on antifreezes A, B and C gave excellent duplicate checks. A and B provided better corrosion protection than C with D, E, and F about tied for last place.

Antifreezes A through F were corrosion tested at 0°F. for 174 days. Antifreeze C gave a weight loss of 16 milligrams on cast iron. The other five antifreezes showed no significant corrosion.

Conclusions

Fleet test results yield the following conclusions:

1. Aluminum was corroded more than ferrous metals in all six antifreeze solutions tested.
2. In four of the six antifreeze solutions the average corrosion rate of aluminum was greater than experienced in water alone.
3. In all the antifreezes tested the corrosion rate of ferrous metals was less than experienced in water alone.
4. Two of the six antifreezes tested provided superior corrosion protection.

Correlation of Results

Investigators who have reported cooling system and glycol antifreeze corrosion data have generally stated that laboratory data can only serve as a screening method and cannot yield conclusive results. Table VI supports the claims of these investigators, namely, that good fleet test data are the most conclusive evidence of a quality antifreeze. Table VI unsuccessfully attempts to correlate the corrosion information from the three test methods used in this study of aluminum and ferrous corrosion rates.

The data for antifreeze A in Detroit tap water correlated satisfactorily for all three test methods. This would indicate that the laboratory data on various test waters would be representative of actual service performance of this antifreeze.

For antifreeze B the data correlated well with the exception of the insulated aluminum specimen. Since the aluminum-brass washer-cast iron couples which were used on the duplicate set of coupled specimens, appeared to show only slight attack, the im-

(*Turn to Page* 102)

Table VI. Comparison of Corrosion Data From Three Methods

Using Type 2 Water

		Milligrams per Specimen			Antifreeze
		Steel	Cast Iron	Aluminum	Tested
ASTM		— 0	+ 1	— 15	
Simulated Service	Coupled	— 1	+ 2	— 6	A
	Insulated	— 0	+ 2	— 5	
	Holder	— 1	+ 1	— 9	
Fleet Test Holder	Aver. of 2	0	— 2	— 10	
ASTM			+ 2	— 8	
Simulated Service	Coupled	— 1	+ 1	— 10	B
	Insulated	— 1	— 7	—113	
	Holder	— 1	+ 6	— 27	
Fleet Test Holder	Aver. of 2	— 1	+ 6	— 7	
ASTM		— 1	— 45	— 29	
Simulated Service	Coupled	— 16	+ 4	— 41	C
	Insulated	— 0	+ 3	— 25	
	Holder	+ 4	+ 3	— 30	
Fleet Test Holder	Aver. of 2	0	+ 1	—218	
ASTM		— 48	— 94	— 28	
Simulated Service	Coupled	— 1	— 2	— 66	D
	Insulated	— 1	— 0	+ 12	
	Holder	— 8	— 4	— 65	
Fleet Test Holder	Aver. of 2	— 36	—315	—233	
ASTM		— 30	— 93	— 7	
Simulated Service	Coupled	+ 1	—168	—126	E
	Insulated	— 17	— 26	— 79	
	Holder	+ 3	— 80	— 77	
Fleet Test Holder	Aver. of 2	— 16	—100	—430	
ASTM		— 24	— 66	— 5	
Simulated Service	Coupled	— 4	— 27	— 70	F
	Insulated	— 4	— 10	— 81	
	Holder	— 2	— 17	— 56	
Fleet Test Holder	Aver. of 2	— 13	—153	—255	
ASTM (1 week test data)		423	483	8	Water
Fleet Test (4 months)		373	889	193	only

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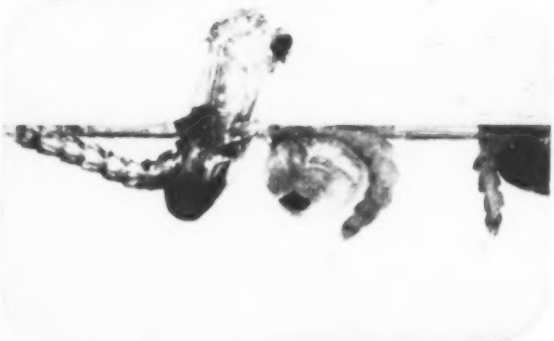
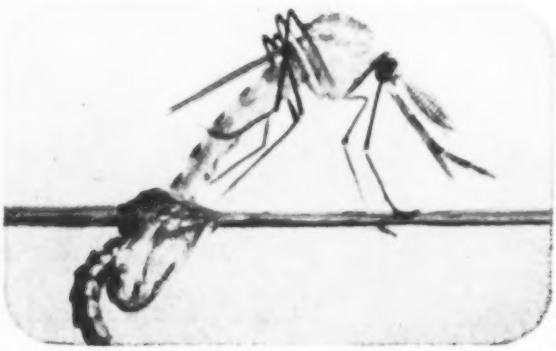
Larvae of Southern House Mosquito breathe through tube inserted at water surface. Pupal shell (center) holds adult just ready to emerge.

Skin is broken, and head of adult mosquito raises above water surface.



By pumping air into its abdomen, mosquito creates pressure to force itself out of pupal case.



Nearly emerged, and already hungry for human blood, adult mosquito (*Culex quinquefasciatus*) will rest briefly before it is able to fly in search of food.

TAKING OFF but headed for a fall

The dramatic photo sequence on the left illustrates the formidable powers nature has given to the insects that plague mankind. Science, however, has provided man with an arsenal of modern pesticides to protect his health and well-being.

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Evaluating Polishes

(*From Page* 83)

ence in gloss values between compositions 37A and 37B were not considered to be significant although the results leaned toward preference for longer periods of polish mobility.

The balance of the viscosity data on the remaining seven waxes is summarized in Table VI. On preliminary examination, the results showed definite differences in viscosity-drying time characteristics which could not be related to general types of floor polish. Three of the four types of polishes appeared to exhibit a sinusoidal drying curve. The high solids composition (F) showed a rapid increase in viscosity which we describe as a sharp sloped curve. In a similar manner, we attempted to relate the other polishes to the form of the viscosity-drying time curve as shown in Figure 3.

The data were subjected to a number of analyses in attempts to uncover correlations that might lead to explanations for the gloss behaviors of the polishes. Our efforts in this direction were unsuccessful, leading us to conclude that based on the data there is no apparent connection between gloss and "hold out" or film mobility. However, we did find that there was some possible connection between the period of mobility and the type of curve. By arranging the data according to time required to reach a point of no flow, we obtain the interesting connection shown in Table VII.

Table VII. Grouping of polishes by time required to attain maximum viscosity

Sample	"No-flow" time	Curve Type
F	3-5 Min.	A
C-37A	7-8 Min.	B
C-37B	8-9 Min.	B
E	8-10 Min.	B
C	10-12 Min.	B
C-37	10-12 Min.	C
A	12-15 Min.	C
D	12-15 Min.	C
G	12-15 Min.	D
B	15-17 Min.	D

We were also able to show that the flow-down method used to estimate viscosity corresponded reasonably well to kinematic viscosity values. By comparing the flow seconds of each polish at 0 minutes drying time to the kinematic viscosities at 75°F., we obtained a straight-line function as illustrated in Figure 4.

Discussion: The data that were obtained failed to answer the posed questions with regard to effect of "hold-out" or film mobility on gloss formation. However, in retrospect, we believe that the experimental design rather than the developed test procedure accounted for the absence of correlating facts. We now believe that our selection of widely differing floor polishes introduced so many variables that the effect we sought was obscured.

We think the method we have evolved is a reliable and useful one for determining viscosity of floor polishes, during drying, after various elapsed periods of time. This is not the same as the viscosity of the same material at higher concentration. During drying, various volatile materials aside from water are lost. Proportions of ingredients in the residue are not equivalent to their proportions in an originally more concentrated composition. There are also differences in homogeneity which occur on drying, as compared with the uniformity of a more concentrated original polish. In addition to exploring relationships to gloss, the method may be useful in determining relationships to leveling properties which we think should also be influenced by changes in fluidity of the film during drying.

It is hoped that others will find this work of sufficient interest to employ and refine these methods in connection with further study of the properties of water emulsion polish dispersions.

Acknowledgements

We wish to thank Dr. F. J. Wolter and Dr. P. F. Hoglund of E. I. du Pont de Nemours & Co. for their many helpful suggestions and G. D. Burns, formerly with Foster D. Snell, Inc. for his valuable assistance in this project.

Aerosol Flow

(*From Page* 74)

used as being reasonably close to the pressure valve mentioned above with a 0.168 cm. equivalent diameter.

(*To be concluded*)

Table VI. Drying-viscosity data determined on various commercial floor polishes

Median viscosity in seconds via glass plate test after drying

Sample	Type	0 Min.	1 Min.	2 Min.	3 Min.	5 Min.	7 Min.	8 Min.	10 Min.	12 Min.	15 Min.	17 Min.
C-37	Polymer	72.6	68.0	62.6	66.0	71.2	73.4	—	78.6	No flow	—	—
C-37A	Polymer	70.2	80.0	75.2	71.7	76.4	100.8	No flow	—	—	—	—
C-37B	Polymer	67.0	73.8	79.3	75.6	74.3	76.2	104.0	No flow	—	—	—
B	High Resin	61.8	75.7	79.9	79.9	87.6	88.8	—	94.9	—	141.4	No flow
A	High Resin	40.5	55.2	—	62.2	64.8	—	—	66.4	68.4	No flow	—
D	High Wax	66.6	71.6	—	76.6	76.2	—	—	79.0	94.0	No flow	—
F	Wax-Silica	85.2	105.2	—	120.2	No flow	—	—	—	—	—	—
G	Wax-Silica	70.2	75.2	—	79.7	83.0	106.0	—	110.0	123.3	No flow	—
E	High Wax	72.1	80.4	—	82.3	71.7	90.0	—	No flow	—	—	—
C	High Resin	54.3	74.6	72.2	75.0	64.3	78.4	—	108.6	No flow	—	—

Insecticides as Tools

(*From Page 70*)

more efficient than a one man operation, for two men together keep each other awake, a serious hazard, apparently, for solo operations in his country.

(*To be concluded*)

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Cooling System

(*From Page 97*)

portance of the insulated aluminum loss was discounted. Therefore the laboratory test water data were considered representative of actual use.

Antifreeze C data did not correlate since ferrous metals were not corroded in the circulating type test contrary to laboratory evidence. However, the laboratory values on type I distilled water indicated 76 for aluminum and 2 for ferrous metals which correlates with the other data for antifreeze C.

The laboratory corrosion losses on antifreeze D were about one-third or less than those obtained by the fleet test. The simulated service test did not show any attack on ferrous metals as compared to the other test methods. No reasons could be found to ex-

plain this lack of correlation between the similar methods of testing, other than the length of test time. On the basis of the fleet test data it was concluded that field experience would be somewhat worse than indicated by the laboratory test. Therefore the laboratory readings for various test waters would represent approximately one-half the corrosion which may occur in service for antifreeze D.

Antifreezes E and F showed better correlation between the simulated service and fleet test data. The laboratory ferrous corrosion compared favorably to the other data but the laboratory aluminum losses were not representative of those obtained by the other methods. Here, again, the fleet test was a more severe exposure than the other test methods.

The corrosion data for type 2 water indicate that the laboratory and fleet test results correlated fairly well for the ferrous metals but that laboratory losses on aluminum are less than those obtained in service.

In reviewing the laboratory results in Table I we would be led to believe that in glycol antifreeze solutions aluminum was less corroded than ferrous metals. However, the simulated service fleet test information indicates that in the majority of cases aluminum would corrode at a much greater rate than ferrous metals. This was illustrated much more drastically when the weight losses of Table VI were converted to inches penetration per year (IPY) as shown in Table VII.

Although aluminum was corroded more heavily than cast

Table VII. Fleet Test Corrosion Data in Inches Penetration Per Year of Aluminum Corrosion

Antifreeze	Cast Iron	Aluminum
A	——	7.72×10^{-5}
B	——	5.05 "
C	——	157.0 "
D	85.7×10^{-5}	168.0 "
E	27.2 "	310.0 "
F	41.7 "	184.0 "
Water	490.0 "	278.0 "

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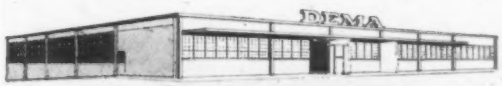

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iron, it should be noted that the highest corrosion rate 310 x 10^{-5} inches per year is equivalent to 40 years service life for a $\frac{1}{8}$-inch metal depth. This is assuming uniform surface corrosion with no pitting. In cases of high corrosion, pitting would normally be present and shorten service life considerably.

Since many design factors strongly favor the use of aluminum, it is expected that cooling system corrosion will not be considered a major obstacle. Future aluminum alloy and antifreeze inhibitor developments will play an important part in the changeover to aluminum engines.

Summary

The data in Tables VI and VII indicate the following general trends:

1. Aluminum was corroded at a greater rate than ferrous metals in simulated service and fleet tests of glycol antifreeze solutions prepared from Detroit tap water.
2. In the fleet test study aluminum corroded at about the same penetration rate for both glycol antifreeze solutions and Detroit tap water.
3. Antifreeze solutions which gave excellent corrosion protection in the fleet test showed good corrosion protection in the other methods of test.
4. Metal corrosion rates should be established on the basis of fleet test data obtained on typical use cycles rather than by accelerated laboratory corrosion test methods.★★

Photographs taken at 45th CSMA midyear meeting on this and following pages were not used in the June issue for lack of space

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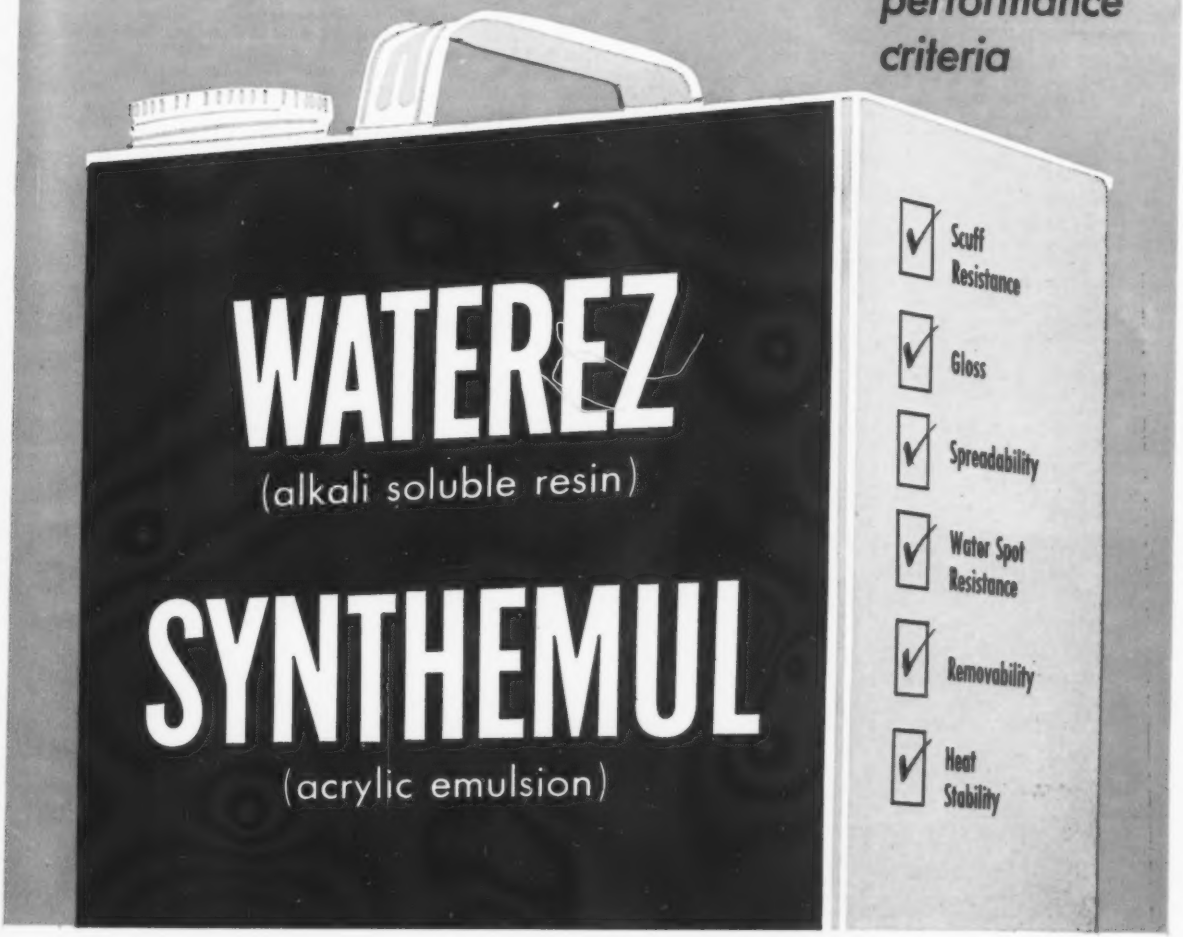

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DR. FRED T. REED is a native of Wilmington, Delaware. He was graduated from Swarthmore College with a bachelor's degree in chemistry, then joined the Army. He served in the Pacific area during World War II, attaining the rank of captain. Following his discharge from the Army, Fred entered the University of Maryland, where he obtained his Ph.D. degree in chemistry. He joined the Du Pont Company as a research chemist in 1950 and was assigned to the "Freon" Products Division. Fred has done a variety of work for the aerosol industry including methods for moisture analysis of propellents, propellent systems for low-pressure cosmetic aerosols and studies of anti-perspirant compounds. Currently, Fred is in charge of all sales service work for the aerosol industry at the "Freon" Products Laboratory at Chestnut Run near Wilmington.

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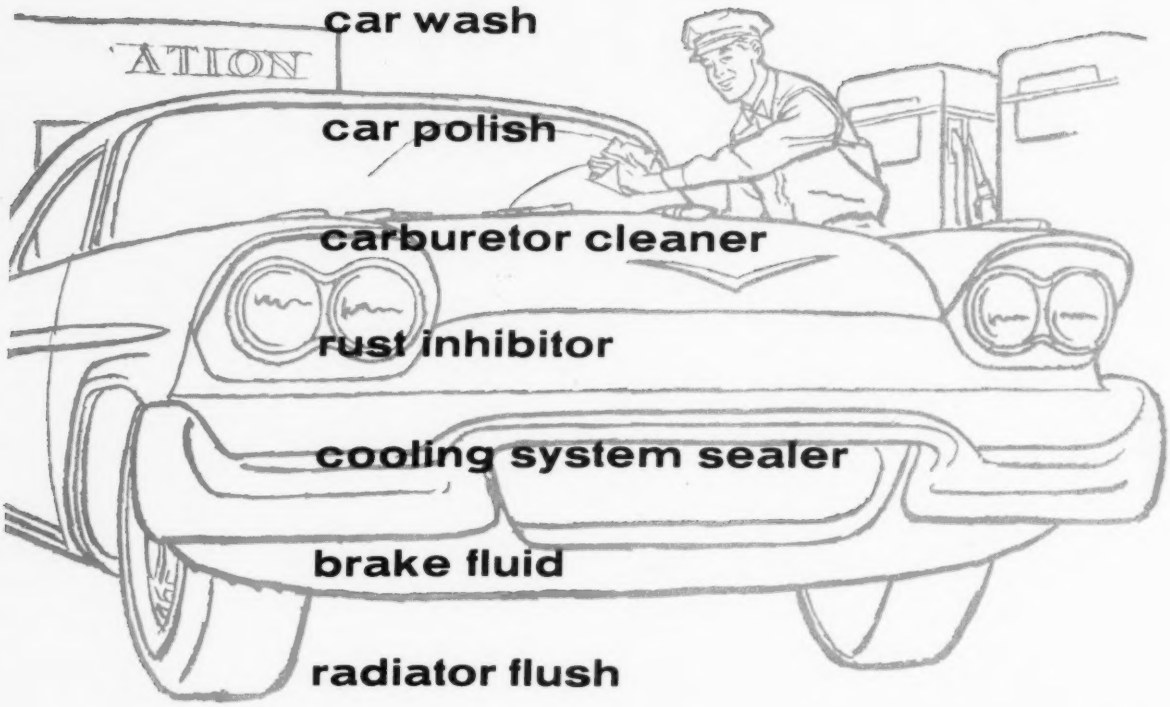
Wiley J. Pickett, Moorestown, N. J., aerosol merchandising and marketing consultant demonstrates one of the products in his creation, "The House of Aerosols" at the main department store of John Wanamaker in Philadelphia last month. Located in the housewares department the center dispenses information about pressure packaged products and also serves as a sales center. Wanamaker's Wynnewood, Pa., branch also has an aerosol spray center. See article beginning on page 127.

Let Continental's family of Cone Tops work for your family of auto products



...your most economical container comes in seven different sizes

You can depend on Continental Cone Top cans to give top sales support to your whole family of automotive products. Continental Cone Tops offer you precision-made containers that meet the highest quality standards plus:

LOWEST COST: Continental Cone Tops are the most economical containers made for auto products. A prestige container at the lowest possible cost! You can't beat it.

4 OZ. TO 16 OZ.: Continental Cone Tops offer you a choice of seven different sizes. A wide enough variety to serve your entire line of automotive products.

PROMPT DELIVERY: Continental has shipping plants located throughout the entire U.S. ready to supply you with all the Cone Tops you need. Call Continental today.

CONTINENTAL CAN COMPANY

Eastern Division: 100 East 42nd Street, New York 17
Central Division: 135 South La Salle Street, Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare Street, Montreal, Que.

Packaging NOTES

Inland Steel Container Plant on Stream

THE dedication of a 78,000 square foot addition to the Jersey City, N. J., steel pail making facilities of Inland Steel Container Co., Chicago, took place during open house ceremonies June 16. Built at a cost of $2,750,000, the expanded plant features a highly automated production line which the company claims can turn out steel pails faster (2,400 per hour) than any other plant in the U.S.

The most modern equipment yet devised produces these pails, E. T. Statler, vice-president and eastern regional sales manager for Inland Steel Container Co. said.

Philip D. Block, Jr., vice-chairman of the board of Inland Steel Co., and chairman of Inland Steel Container Co. and Robert J. Greenebaum, president of Inland Steel Container Co., were on hand for the event. Governor Robert B. Meyner, chief executive of the state of New Jersey officially cut the ribbon marking the formal opening of the plant and Mayor Charles Witkowski of Jersey City participated in the dedication ceremonies.

Important features of the new plant installation include:

• • A coil shearing operation which enables the company to purchase steel in coils rather than in bundles of flat sheets. Coils can be sheared to any size required to produce a container of a given capacity.

• • A newly installed, modern lithography press, which provides a complete in-plant decorating service. From original idea to finished container, Inland's design, decorating and manufacturing service can create for customers attractive and functional steel packages.

• • With the development of a new materials handling system in combination with a new centrifugal electrostatic paint and lining application for pail parts (heads, bottoms, covers), a high degree of control and uniform quality is possible.

• • A materials handling system designed to minimize contact of pails and parts in the manufacturing process, practically eliminating mars, scratches and imperfections.

Part of automated production line at Inland Steel Container plant in Jersey City, N. J.

New Jersey's Governor, Robert B. Meyner, center, examines pail at dedication of Inland Steel Container's new plant. Looking on are Philip D. Block, chairman, left, and Robert J. Greenebaum president of Inland Steel Container Co.

• • The installation of the first centrifugal spray type pail-body-lining machine minimizes lining imperfections such as pin holes and blisters. The new process, which uses no air, eliminates dust, oil and moisture, results in uniform coatings.

• • A highly sensitive leak tester inspects every pail on the high speed pail line.

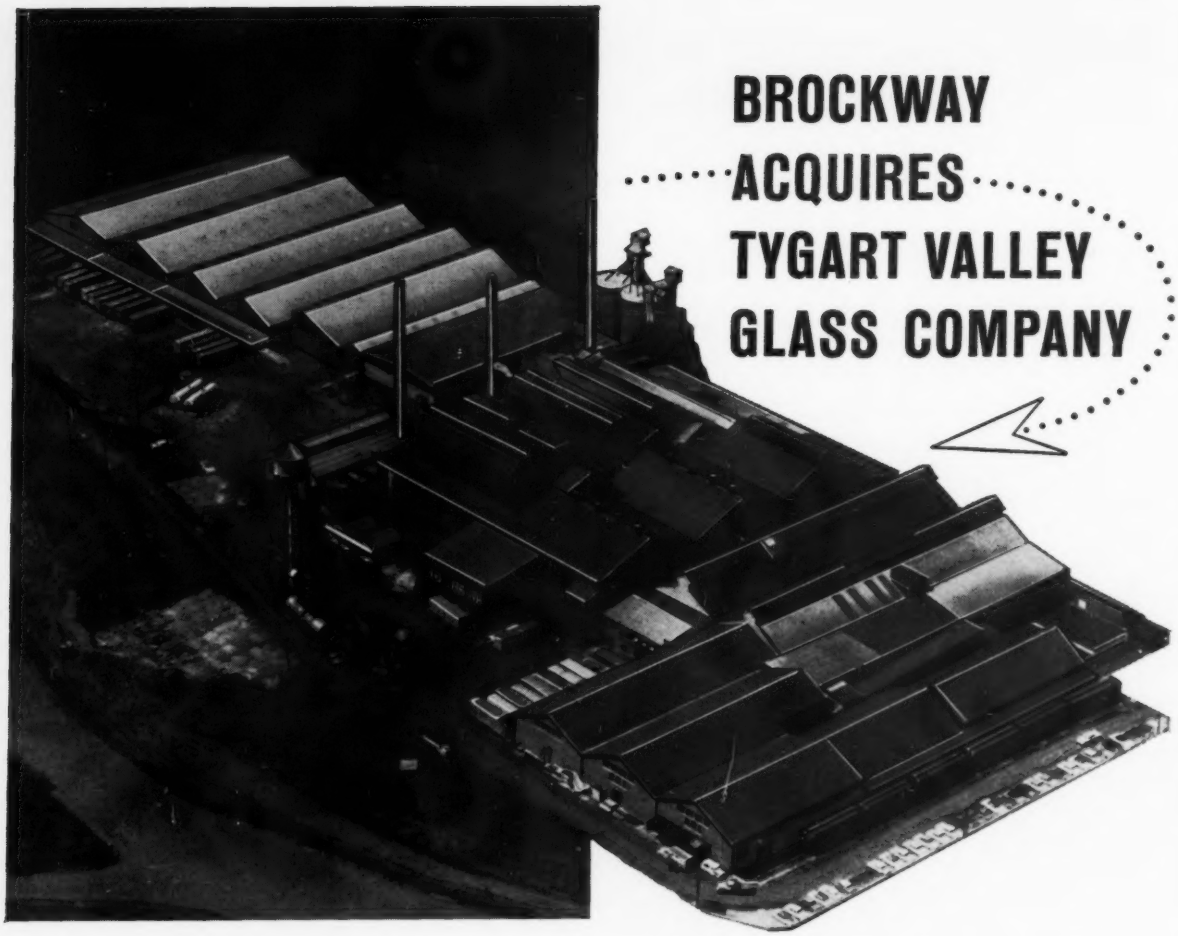
• • The entire facility is designed for quick change. In minutes, the production line can be adapted to a new pail. In addition, enlarged warehouse facilities permit the company to inventory a wide range of various types and sizes of steel pails for delivery to customers on short notice.

The plant, which employs 350 people, can produce steel pails in capacities of from two to 12 gallons. Other containers which can be made at the plant are carbon steel drums of from 13 to 65 gallons capacity; stainless steel drums and pails; heavy duty ICC drums and galvanized pails.

—★—

Metal Tube Shipments Up

Shipments of collapsible metal tubes for the first quarter of this year rose sharply according to the Collapsible Tube Manufacturers Council, New York. Total shipments amounted to nearly 273.5 million tubes, 15 per cent more that the 242.7 million shipped in the comparable 1958 period. The gain in March was 24 per cent.



BROCKWAY ACQUIRES TYGART VALLEY GLASS COMPANY

GREATER RESEARCH, ENGINEERING AND PRODUCTION FACILITIES ENHANCE CUSTOMER SERVICE NATIONWIDE

The recent acquisition of Tygart Valley Glass Company solidifies Brockway Glass Company's position in the glass container industry by making it the fourth largest glass container manufacturer in its field. Tygart Valley will now be operated as a wholly-owned subsidiary of Brockway.

This consolidation provides greater flexibility of existing production facilities and broader service potentials in key markets to the benefit of the customers of both companies. It also integrates management skills and operating personnel as well as vital research and engineering capabilities.

This is another progressive step in our overall growth plan to enable us to constantly improve our facilities and abilities to serve our customers in the food, beverage, beer, liquor, Rx, pharmaceutical, toiletries and household chemicals industries.

GLASS CONTAINERS · SYMBOL OF QUALITY

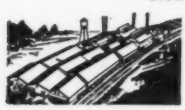
BROCKWAY GLASS COMPANY, INC.

Brockway, Pennsylvania

Lapel, Indiana, Plant

Crenshaw, Pa., Plant

Freehold, N. J., Plant



Brockway, Pa., Plant

Subsidiary: Demuth Glass Works, Inc., Parkersburg, W. Va.

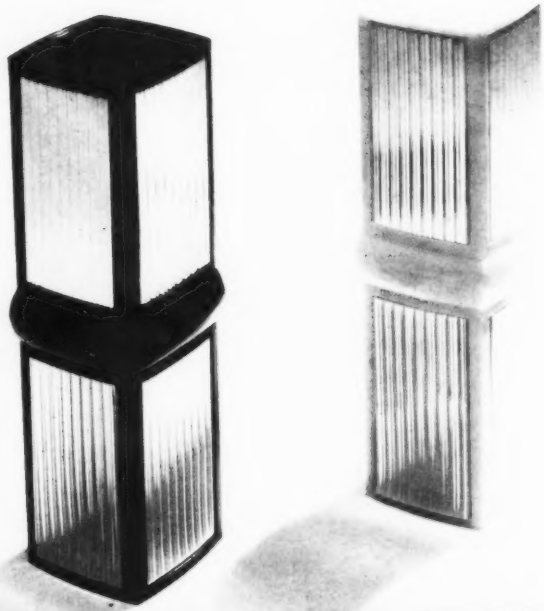
Muskogee, Okla., Plant

What's New?

New pressure packaged "Spray Aluminum Wax," introduced recently by Jet-Aer, Inc., Paterson, N. J., is designed to preserve and protect metal surfaces. The wax, marketed in 12-ounce pressure cans supplied by American Can Co., is said to be greaseless, colorless and non-irritating. The product retails for $1.98 in hardware, variety and department stores. "Spray Aluminum Wax" may be used on chromium, stainless steel and aluminum to prevent rust, pitting, discoloration and corrosion, according to the maker.

"Spree," a new toilet bar detergent being introduced by Colgate-Palmolive Co., New York, in western Michigan, northern Florida and in Columbia, S. C. features an exclusive contour shape (bottom, right) designed to fit the hand and body. Color of new bar is aqua. Packaged in aqua foil box that features push-in, pull-out opening, "Spree" is available in "regular" and "bath" sizes. Latter retails for about two for 30 cents; former is two for 29 cents.

Something new—and different—, neomycin has been added to "Vano" liquid starch produced by B. T. Babbitt, Inc., New York, at its plant in Oakland, Calif. The addition of the antibiotic, of course, is to control bacteria in perspiration responsible for body odor. Widely distributed in western states and Hawaii, "Vano" liquid starch is packed in pint, quart, half-gallon and gallon bottles supplied by Owens-Illinois Glass Co., Toledo. Closure also by O-I. Stecher-Traung Lithograph Corp., San Francisco, supplies the labels.



The availability in pressure package of "Bust Rust," described by its maker as an "all-purpose, extremely fast-acting, penetrating and lubricating oil," was announced recently by Jet-Aer, Inc., Paterson, N. J. The product, in cans supplied by American Can Co., comes in a six-ounce size for home, garage and workshop use, and in a 12-ounce size for industrial purposes. The smaller unit sells in hardware, variety and department stores. Product uses include: freeing rusted nuts, bolts, auto mufflers, door locks and similar items, and repairing and oiling sewing machines, bicycles, lawn mowers.

Reformulated "Westley's" auto polish has been "acrylized," it was announced recently by Westley Industries, Inc., Cleveland, O. The polish, which is based on silicone oils, was altered to increase its compatibility with that of new automobile finishes, the maker states.

New packaging idea for its concentrated "Prestone" car wash, with special appeal for the service dealer, has just been announced by National Carbon Co., Division of Union Carbide Corp., New York. The detergent is being packaged in "bulk" (12 pounds) in re-usable 3½ gallon galvanized steel pails, which are styled in three colors, when empty can be used for many purposes around service stations and garages.

New "Petite Mist" fragrance of Coty, New York, comes in novel plastic package (by Pyro Plastics Corp., Union, N. J.), which houses pressurized glass bottle (by Wheaton Glass Co., Millville, N. J.). Coating Products Corp., Englewood, N. J., did the decorative gold mylar work on plastic cases, which come in white or black. Valve is from Risdon Mfg. Co., Naugatuck, Conn., and Associated Brands Co., Brooklyn, is the contract loader. One and one-half ounces of "Petite Mist" retail for $2.50 plus tax.

Marking the introduction of new trial travel size "bubble" of "Shampoo Plus Egg" (top, left), Helene Curtis, Chicago, is making special consumer offer of one free "bubble" with purchase of 59¢ bottle of "Shampoo Plus Egg" and two "bubbles" free with purchase of $1.00 size of the shampoo. Colorful counter display boot is available to promote the idea.

White King Soap Co., Los Angeles, last month announced introduction of new convolute-type container for its cleanser. Container features improved positive seal to protect perfume and guard against moisture, says White King. New 22-ounce "king" size is currently being introduced in Calif., Ariz., New Mex., and El Paso, Tex. Decorative wraps are in pastel green, pink, turquoise and yellow. Container by Cleveland Container Co., Cleveland.

Special acetate cylinder containing 144 bubbles of Helene Curtis "Shampoo Plus Egg," top right, is designed to be placed on store counters next to cash register or other high traffic, high-impulse locations.

Liquid all-purpose "Bon Ami" cleaner is being introduced by Bon Ami Co., New York, in clear utility quart bottles made by Hazel-Atlas Glass Division of Continental Can Co. Encircling four color label (green, yellow, white and black), by W. W. Fitzhugh Co., lists brand and product name as well as directions for use. White screw cap is made by Hazel Atlas.

Entry of Los Angeles Soap Co. into the private label toilet soap field was announced last month by Don L. Reed, head of firm's specialty sales division. Boxes of 12 pink bars, both box and soap carrying the store's name, will retail at an introductory sale price of $1.98, regular price is $3.00. Department stores accepting the idea include Bullock's, Pasadena; 14 Joseph Magnin stores in northern California; Korrick's, Phoenix, and Neustetter's, Denver.

New slim and trim glass bottle by Thatcher Glass Co., New York, has been adopted by Stanley Home Products Co., Inc., Easthampton, Mass., for its "Creme Rinse." Retail price of eight ounce bottle is 90 cents.

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WHETHER your product requires liquid filling by gravity . . . or aerosol filling (with hydrocarbons, halocarbons, or nitrogen and other inert gases as propellants) . . . in can, glass or plastic containers . . . we have complete facilities for handling the job, large or small. Let us help you solve your filling probems . . . write, phone or wire

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Housewives Prefer Cans for Specialties

A PREFERENCE for non-drip metal cans as the favorite containers for liquid household products was indicated in a survey recently completed by American Can Co., New York. A liquid all-purpose cleaner was used to test the preference for non-drip cans and boules in three cities, Robert C. Stolk, vice-president—sales, Canco division, stated. After a four-week test, it was found that 83 per cent of the housewives checked preferred the use of cans.

Other results of the survey disclosed that the percentage of those favoring cans increased with familiarity with the product. Before comparison of the two containers in actual use, only 57 per cent declared that they preferred the product in cans. After two weeks this percentage rose to 77 per cent and, after four weeks, it was 83 per cent. Non-breakage and safety features were the principal factors influencing the preference for non-drip cans. When asked specifically which container would be the safest for home use, 89 per cent chose the can.

Other major reasons cited for metal can preference were the non-drip spout, the measuring cap, and ease of handling.

The survey was conducted in three different markets, one in which the cleaner had high home penetration, one in which it had been only partially established, and one in which the use of the cleaner was virtually unknown to to housewives.

In the first market, where the product previously had been purchased and available only in bottles, 42 per cent of the housewives preferred cans when first approached, and before using the product in the can. This figure rose to 74 per cent after the product was used in both metal and glass containers.

In the partially established market, 76 per cent preferred cans after using both packages. In the undeveloped market the preference for cans was 84 per cent where the product had been previously unavailable in either container.

The survey also revealed that 72 per cent of the housewives over 50 years of age who were queried preferred the product in cans. This group were those most expected to resist a change from bottles. Among housewives age 30 and under, 86 per cent preferred the canned cleaner.

Pint containers were used in all phases of the survey except in the first market where quarts were also used. Non-breakage and ease of handling features were more important factors among users of the quart cans.

Test samples contained the same product from the same batch and production line. However only 81 per cent of the housewives correctly recognized no difference in the product in the two containers. Of the remaining group, 64 per cent preferred the canned cleaner because they thought it was a stronger and more effective product.

Field work and data processing of the survey were conducted for Canco by M. A. Wallach, Inc., New York, an independent market research agency.

—★—

"Best Cartons" on Tour

Award-winning cartons of the 1959 national folding carton competition sponsored by the Folding Paper Box Association of America, Chicago, made a two months nation-wide tour this spring and were viewed by nearly 4,400 persons in or related to the packaging industry. Following an initial public exhibit in Chicago, the "100 best cartons of the year" were displayed at luncheon and dinner meetings of advertising and sales executives clubs in about 19 major cities.

Rex Paxton, Sutherland Paper Co., Kalamazoo, Mich., and Gustav L. Nordstrom, FPBAA executive director, addressed most of the meetings. Other speakers were: A. W. Buchanan, F. N. Burt Co., Rochester, N. Y.; D. A. Forsberg, Forsberg Paper Box Co., Madison, Wis.; Arthur N. Morris, Newth-Morris Box Corp., Jacksonville, Fla., and Ermin P. Ruf, Wayne Paper Box & Printing Corp., Fort Wayne, Ind.

The 1959 competition attracted more than 1,200 entries and awards were given to 49 boxmakers.

—★—

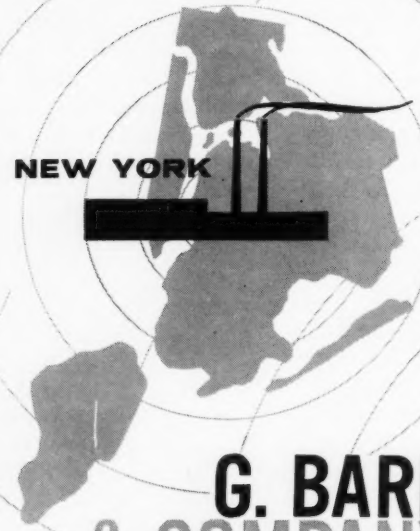
Continental Can Changes

Four appointments in the sales organization of the metal division of Continental Can Co., New York, were announced recently.

Randall L. Jones, formerly Baltimore district sales manager, has been named sales manager for packers' cans in the eastern metal division of Continental and Thomas J. Hughes, formerly sales manager for general line cans in the eastern metal division, has been appointed sales manager of the Paterson, N. J., district office. Succeeding Mr. Jones in Baltimore is W. H. Palmer, who had been district sales manager in Paterson.

R. D. Slocum, previously New York district sales manager, has been named to head a newly established district sales office in Queens County, Long Island. The new office is located at 50-02 55th Ave., Maspeth 78, N. Y.

Thomas J. Hughes



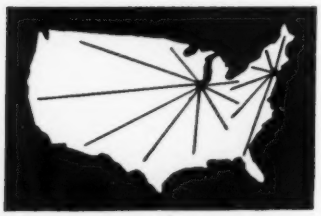
GET THE FACTS ABOUT THE MANY ADVANTAGES OF

G. BARR & COMPANY TWO-PLANT AEROSOL PACKAGING SERVICE

In New York—as in Chicago—you can enjoy the outstanding research, product development and precision aerosol packaging service of a G. Barr & Company *local* plant and also share in the *many advantages* of G. Barr & Company *two-plant* operation.

Among these advantages are the potential savings in both shipping and production costs. You also enjoy the benefits of our unsurpassed laboratory facilities, of our two-plant buying power, our time-tested quality controls and the important know-how gained over the years in the production of hundreds of millions of aerosol packages.

There are many other important pluses which *only* G. Barr & Company can offer. We would like to tell you about them, at your convenience and without obligation. Just contact our nearest office for facts.



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Division of Zenith Drug Inc.
Newark, New Jersey

Aerosol Techniques, Inc.
Bridgeport, Conn.

A-M-R Chemical Company Inc.
Brooklyn, N. Y.; Los Angeles, Calif.

G. Barr & Co.
Chicago & New York

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Forest Park (Chicago), Ill.

Claire Mfg. Co.
Ft. Lauderdale, Fla.

Chase Products Co.
Broadview, Illinois

Continental Filling Corporation
Danville, Ill.; Hobart, Indiana

Eveready Pressurized Products
Cleveland, Ohio

Fluid Chemical Company, Inc.
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Fuld Brothers, Inc.
Baltimore, Maryland

Gard Industries Inc.
Northfield, Illinois

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Scranton, Pennsylvania

I-K-I Manufacturing Co., Inc.
Edgerton, Wisconsin

Jet-Aer Corporation
Paterson, N. J.

Kerr Chemicals, Incorporated
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La Maur, Inc.
Minneapolis, Minn.

Larami Associates, Inc.
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Larson Laboratories Inc.
Erie, Pa.

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Orb Industries
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Panpak
Attica, N. Y.

Peterson Filling & Packaging Co.
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Powr-Pak, Inc.
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Professional Products Laboratories
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Scranton Aerosol Packaging Div.
of the Scranton Corporation
Scranton, Pa.

Shield Chemical Co.
Boston, Mass.

John C. Stalfort & Sons
Baltimore, Maryland

Southeastern Packaging Co.
St. Petersburg, Fla.

Strobel Products Co., Inc.
Louisville, Ky.

Strouse Inc.
Norristown, Pa.

Thomassen of Pa. Inc.
Norristown, Pa.

Wellston Aerosol Mfg. Co.
Wellston, Ohio

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Fluorex — This for fungicides and insecticides. Filed Oct. 21. 1958 by American Fluoride Corp., New York. Claims use since Jan. 1, 1926.

Duchess — This for household detergent in powdered and liquid forms. Filed July 7, 1958 by West Coast Grocery Co., Tacoma, Wash. Claims use since June 24, 1958.

A-M — This for oven and grill cleaner and dust-absorbing compositions for application to dust mops and dust cloths as an aid in cleaning. Filed Oct. 6, 1958 by American-Marietta Co. (O-Cedar division), Chicago. Claims use since on or about Oct. 15, 1956.

Louse-Chase—This for insecticide for animals and poultry. Filed Mar. 21, 1958 by Dairy Association Co., Lyndonville, Vt., assignee of Graylawn Farms, Inc., Orleans, Vt. Claims use since Oct. 23. 1919.

Colonial-42—This for rodenticides. Filed June 24, 1958 by Colonial Products, Inc., West Palm Beach, Fla. Claims use since Oct. 25, 1950.

"Surface Tension 21"—This for liquid cleaning preparation for general cleaning, de-waxing, de-greasing, and disinfecting. Filed Dec. 3, 1957 by U. S. Polychemical Corp., Newburgh, N. Y. Claims use since Sept. 1, 1957.

Nu-Horizon—This for cleaning preparation for use on rugs, carpeting, and upholstery. Filed Oct. 2, 1958 by J. S. Honigblum, doing business as Nu-Horizon System, San Antonio, Tex. Claims use since May 27, 1958.

Era—This for sudsing cleaner, cleanser, and detergent. Filed Nov. 19, 1958 by Procter & Gamble Co., Cincinnati. Claims use since Oct. 21, 1958.

Solo — This for laundry detergent. Filed Nov. 20, 1958 by Nelson Chemicals Co., Detroit. Claims use since Mar. 6, 1950.

Countdown — This for dairy cleaner, sanitizer, and disinfectant. Filed Nov. 21, 1958 by Anderson Chemical Co., Litchfield, Minn. Claims use since Oct. 23, 1958.

101—This for liquid detergent and dry bleach. Filed Nov. 21, 1958 by Gardiner Manufacturing Co., Buffalo, N. Y. Claims use since Jan. 4, 1955, for liquid detergent.

Hard Gloss — This for liquid polish for floors. Filed Sept. 7, 1956 by S. C. Johnson & Son, Inc., Racine, Wis. Claims use since Apr. 30, 1951.

Chase-A-Bug — This for insect repellents in the nature of paper tissues. Filed Mar. 31, 1958 by Orchard Paper Co., doing business as Rich Products Co., St. Louis, Mo. Claims use since Mar. 17, 1958.

Rid-On—This for tablets used for exterminating cockroaches and waterbugs. Filed Apr. 23, 1958 by The Berjon Co., doing business as Berjon Co., Memphis, Tenn. Claims use since July 20, 1956.

Buga-Lawn—This for chemical insecticide. Filed July 28, 1958 by Mock Seed Co., Pittsburgh, Pa. Claims use since May 1, 1958.

S'peer—This for household insect spray. Filed Aug. 13, 1958 by Whitmel H. Gibson, Jordanton, Tex. Claims use since May 15.1958.

Wil-Gleam — This for glass cleaner in the form of a liquid solvent. Filed Mar. 3, 1958 by Wilson Products Co., Cincinnati, assignee of Austin L. Wilson, doing business as Wilson Products, Cincinnati. Claims use since Feb. 15, 1956.

Half Time—This for liquid detergent. Filed Nov. 28. 1958 by Knot Manufacturing Co., Lester, Pa. Claims use since Oct. 7, 1958.

Omega—This for heavy duty cleaning compound. Filed Dec. 1, 1958 by William E. Sievers, doing business as Omega Co., Long Beach, Calif. Claims use since Sept. 28, 1958.

Gain—This for sudsing cleaner, cleanser, and detergent. Filed Dec. 30, 1958 by The Procter & Gamble Co., Cincinnati, O. Claims use since Nov. 21, 1958.

Zepcorex—This for cleaning preparations having incidental deodorizing properties. Filed Dec. 31, 1958 by Zep Manufacturing Corp., Atlanta, Ga. Claims use since March 1956.

Zepomist — This for liquid sweeping compounds. Filed Dec. 31, 1958 by Zep Manufacturing Corp., Atlanta, Ga. Claims use since March 1950.

Zepolene—This for cleaning and wax removing preparations for floors. Filed Dec. 31, 1958 by Zep Manufacturing Corp., Atlanta, Ga. Claims use since March 1945.

Zep-O-Wiz—This for abrasive type paste cleaners for cleaning bath tubs, kitchenware, refrigerators, machinery, soda fountains and the like. Filed Dec. 31 1958 by Zep Manufacturing Corp., Atlanta, Ga. Claims use since March 1958.

Zepteen—This for cleaning and degreasing compounds. Filed Dec. 31, 1958 by Zep Manufacturing Corp., Atlanta, Ga. Claims use since March 1945.

Bobwhite — This for laundry detergent. Filed Jan. 8, 1959 by Bowen Processing Co., Largo, Fla. Claims use since Oct. 15, 1958.

John Lahoud—This for toilet soaps. Filed Jan. 22, 1959 by John Lahoud, Catano, Puerto Rico. Claims use since Sept. 20, 1958.

Zeprotex—This for waxless floor finishing and polishing preparations. Filed Dec. 31, 1958 by Zep Manufacturing Corp., Atlanta, Ga. Claims use since March 1956.

Zepreme—This for liquid self polishing floor waxes. Filed Dec. 31, 1958 by Zep Manufacturing Corp., Atlanta, Ga. Claims use since March 1955.

Duel—This for disinfectant-deodorant for household and industrial use. Filed Oct. 13, 1958 by National Laboratories, Inc., Toledo, O. Claims use since June 13, 1958.

Vapex—This for liquid insecticide. Filed Dec. 5, 1958 by West Chemical Products, Inc., Long Island City, N. Y. Claims use since Nov. 6, 1958.

Oilan — This for insecticide. Filed Dec. 5, 1958 by Wilson & Toomer Fertilizer Co., Jacksonville, Fla. Claims use since Nov. 18, 1958.

Trip—This for insecticide and pesticide. Filed Dec. 5, 1958 by Wilson & Toomer Fertilizer Co., Jacksonville, Fla. Claims use since Nov. 18, 1958.

Dairene — This for dairy cleanser. Filed Aug. 26, 1957 by Allied Home Products Corp., doing business as C-Z Chemical Co., Beloit, Wis. Claims use since Jan. 12, 1958.

Nice—This for liquid detergent for dishwashing and laundry use. Filed Jan. 27, 1958 by Texize Chemicals, Inc., Greenville, S. C. Claims use since Dec. 17, 1957.

Aladdin — This for cleaning powder for use on walls, woodwork, and tile floors. Filed April 11, 1958 by Hutchinson Chemical Corp., Chicago. Claims use since 1947.

Teutonic—This for cleaner in paste and powder form for use on hard surfaces. Filed Oct. 15, 1958 by Harry G. Heiserman, doing business as Twentieth Century Manufacturing Co., Burlington, Ia. Claims use since Oct. 15, 1931.

Mr. Clear—This for windshield cleaner. Filed April 17, 1958 by The Procter & Gamble Co., Cincinnati, O., assignee of Eastenn-Dukes Chemicals, Inc., Rogersville, Tenn. Claims use since May 1, 1956.

Rex-O — This for waterless cleanser. Filed April 18, 1958 by Irving Tugend, doing business as Barry Chemical & Mfg. Co., Chicago. Claims use since 1926.

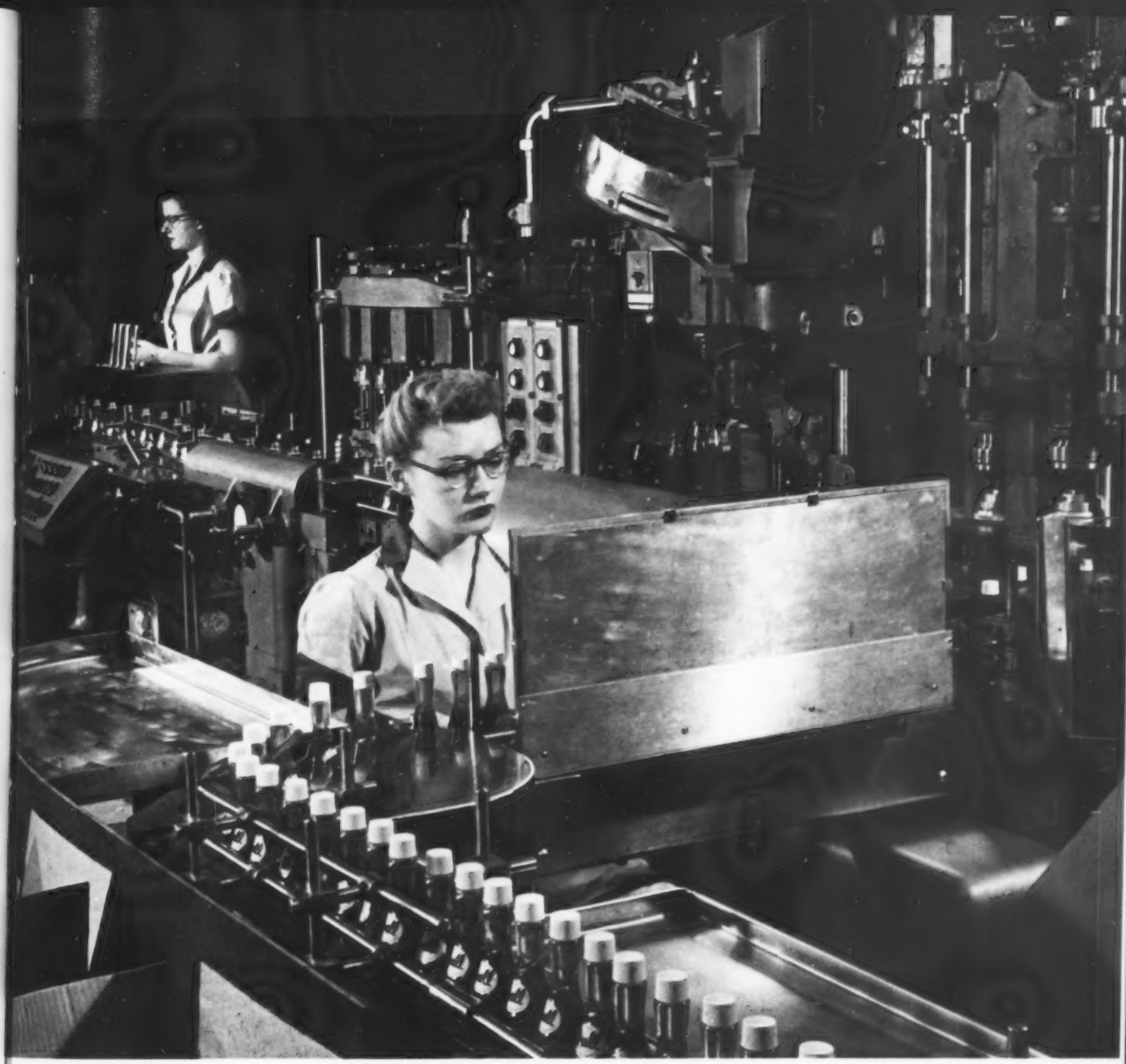
Hi-Level—This for cleansing and detergent compound for use in mechanical dishwashers and dairy plants. Filed May 1, 1958 by Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. Claims use since Mar. 26, 1958.

Sentol — This for industrial-type detergent powder for cleaning dairy equipment. Filed June 20, 1958 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Jan. 27, 1958.

Germidyne—This for liquid detergent germicide cleaner. Filed Oct. 20, 1958 by West Chemical Products, Inc., Long Island City, N. Y. Claims use since Oct. 1, 1958.

Diasyn-7—This for heavy industry detergent. Filed Nov. 28, 1958 by Joseph James Darling, doing business as Crown Chemical Co., New York. Claims use since July 22, 1953.

Staph-Trole—This for antiseptic cleaner for floors, walls, furniture, hospital equipment and the like. Filed Nov. 27, 1958 by Multi-Clean Products, Inc., St. Paul, Minn. Claims use since Nov. 13, 1958.



Why large soap and synthetic detergent firm has used Knox bottles for nearly six years

One of the world's largest and most successful soap and synthetic detergent manufacturers* uses Knox Glass bottles on its toilet goods lines.

The company's attitude toward glass containers has been summed up by one spokesman like this:

"Our glass container specifications are generally tighter than most industries, and we insist that they be met. We are constantly keeping quality control checks on our containers—from the time they come into the plant until the time they are taken off the shelf.

"Naturally, we use only those bottles which consistently meet our high demands."

Knox Glass, Inc., has supplied toilet goods bottles to this manufacturer for nearly six years.

Find out more about the glass quality and high standard of service available to you from Knox's eight plants and 35 sales offices.

Contact your nearest Knox representative, or Knox Glass, Inc., Knox, Pennsylvania.

*Name available on request.

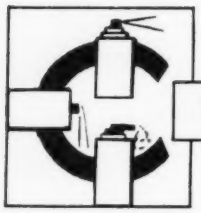
the new / **KNOX GLASS**

H

WANT TO PRESSURE PACKAGE YOUR WATER BASED PRODUCT?

2O

Call CONTINENTAL FILLING CORPORATION for the Needed "Know-How" and Facilities



CONTINENTAL FILLING CORPORATION

Danville, Illinois

PRESSURE PACKAGING

Koken Joins Mojonnier

Ernest E. Koken has joined Mojonnier Associates division of Kartridg-Pak Machine Co., Frank-

Ernest E. Koken

lin Park, Ill., as engineering manager. Previously he was research and design engineer with Bartelt Engineering Co., Rockford, Ill., and also has been associated with Hudson-Sharp Machine Co., Green Bay, Wis., and Hayssen Manufacturing Co., Sheboygan, Wis.

In his new post Mr. Koken succeeds Albert B. Mojonnier who now concentrates on initial development of new machinery and products in the company's new research and development laboratory in Franklin Park. Establishment of the new research section and the separation of initial development from engineering operations is part of the company's plan to produce quality machinery for the aerosol industry, according to George Heath, general manager.

—★—

Aerosol Golf Aug. 11

The fifth annual aerosol golf outing will be held August 11 at Winged Foot Golf Club, Mamaroneck, N. Y., scene of this year's National Open. The 1959 outing, to be operated on a different basis than in previous years when one company was host, will be sponsored by a group of suppliers of containers, valves, propellants, perfuming materials, etc.

Sponsors are entitled to invite as guests loaders and/or marketers of aerosol products.

Firms who have indicated they will be sponsors include: American Can Co., Precision Valve Corp., Crown Cork & Seal Co., VCA, Inc., Continental Can Co.

Also, Pennsalt Chemicals Corp., Wheaton Glass Co., and Risdon Mfg. Co.

—★—

Trains at Old Empire

Robert K. L. Hsu, chief chemist engineer of Taiwan Tobacco and Win Monopoly Bureau, Taipei, Taiwan, China, is undergoing a six months training period at Old Empire, Inc., Newark, N. J. contract packager. He is observing and studying the methods and techniques of manufacturing and packaging of household chemical specialties, cosmetics, fragrances, pharmaceuticals, and other industrial products. The program is being carried on in cooperation with the Bureau of Apprenticeship and Training, International Branch, United States Department of Labor. Upon completion of his study, Mr. Hsu will return to his post in Taiwan and assume the additional duties of consultant to the China Productivity Center to pass on to his government the information he has acquired.

—★—

New Gen. Chemical V.P.'s

The appointments of James P. Farrell and J. Steele Brown as vice-presidents of General Chemical Division, Allied Chemical Corp., New York, were announced last month by I. H. Fooshee, division president.

Director of sales for the past two years, Mr. Farrell now heads the division's sales of acids and other industrial chemicals, laboratory reagents and fine chemicals, agricultural chemicals, and special products including "Genetron" aerosol propellants and refrigerants. He has been with Allied for 24 years and was previously manager of sales for heavy chemicals.

Mr. Brown, formerly director of production, is now in charge of General Chemical's production, mining, purchasing, and industrial service activities.

Robert K. L. Hsu, second from left, shown in laboratory of Old Empire, Inc., Newark, N. J., where he is undergoing six months' training. Others in photo:, l. to r.: Hans W. Maucher, vice-president of Old Empire; Dr. Hedwig Toome and Ellis Regner, chief chemist of the Newark, N. J. contract packaging firm.

The Magic Touch of

EASY DOES IT...
EASY SELLS IT!...
with Aerosols

Aerosol Packaging

can give your products "feminine appeal"

If you have a woman's product, and want to gain entry to milady's chamber for it, consider the advantages of aerosol packaging. The convenience. The glamorous new container shapes, colors and textures. And the high state of development of the aerosol "art."

Aerosol packaging does seem to have a magic touch in helping to sell a woman's product. Hair sprays are still the largest selling single aerosol product group—115 million units in 1958*. Aerosol colognes and perfumes have proved phenomenal sellers—shooting up from 5.4 million units as recently as 1955 to 28 million units in 1958*. Aerosol hand lotions and creams are showing a similar increase, as are aerosol personal deodorants. If you have a product in any of these fields—or a related one—you should be considering aerosol packaging *right now!*

How General Chemical can help you

General Chemical manufactures the right propellant for every cosmetic aerosol need under its trade name "Genetron." These propellants can give your product exactly the right "push" your aerosol formulation requires.

As a leading supplier of aerosol propellants, we will be glad to help you get started in aerosols. We will supply you with market information and technical data. We can tell you about promising new types of aerosol formulations developed in our laboratories. And we can give you information on how contract fillers can help you, from test marketing right through to full commercial production. The fact is, through the use of contract fillers you can get into aerosols without investing a cent in special equipment or personnel!

Why not take advantage of these General Chemical services *now?* Just call or write.

*Estimated by Market Surveys Department, General Chemical Division, Allied Chemical Corporation.

genetron®
aerosol propellants
Putting the "push" in America's finest aerosols

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

Making sales...these Aerosol Containers from Canco!

All these products go to market dressed in the finest . . . Canco's famous Aerosol Containers!

If the sale of your product might benefit from aerosol packaging, there's good reason to turn to Canco. The development of the best aerosol container for your product requires skill . . . experience . . . and the right answers.

Canco recognized the potential of the aerosol container—and pioneered its growth. For instance, Canco developed the tab side seam to give its containers greater buckling resistance and bursting strength.

You'll find Canco experience in the field of aerosol packaging is unsurpassed. A call to your Canco salesman will put this skill to work for *you* and your product.

CANCO Division **AMERICAN CAN COMPANY**

NEW YORK • CHICAGO
NEW ORLEANS • SAN FRANCISCO

Miss Peggy McCarthy, left, "House of Aerosols" demonstrator attracts interest of Miss Mari Friedrichs at unique center in Philadelphia store.

Wanamaker Aerosol Centers

Philadelphia department store installs center to sell pressure packages and dispense information on aerosols at its main store in Philadelphia and Wynnewood branch

MERCHANDISING of pressure packaged household chemical specialties took a major step forward last month with the establishment of an aerosol center in the main store of John Wanamaker in Philadelphia and its branch department store in Wynnewood, Pa. The centers, located in the housewares departments of the two stores, serve to dispense information about pressure packaging, as well as sales headquarters for aerosols.

Idea for the centers, first of their kind in the U. S., was conceived by Wiley J. Pickett of Moorestown, N. J., aerosol merchandizing consultant. The Wynnewood center was established June 20, and the Philadelphia center June 22. They bear the name "The House of Aerosols", which is Pickett's registered trade mark.

He selected the products to be displayed, designed the exhibit, and is training his personnel to attend to the educational, sales, and demonstrating phases of the operation. Most of the products shown are new to Wanamaker's. It is the first time that all aerosols are prominently displayed as a group in one location. They are sold in other sections of the stores as well. Pickett is also instructing Wanamaker's personnel in the correct aerosol sales techniques.

Specializing in aerosol product development and merchandizing for the past 10 years, Mr. Pickett, in addition to his consulting work, markets his own products under the trade name "The House of Aerosols." Prior to establishing his own consulting firm he was sales supervisor for Pennsalt Chemical Co's fluorinated hydrocarbons ("Isotrons") which are used as aerosol propellants.

A representative of *Soap & Chemical Specialties* obtained details of the department store's unique approach to aerosol sales by interviewing Mr. Pickett at Wanamaker's main store in Philadelphia. The Wynnewood display is similar to the one in headquarters store.

The reporter found a keen interest among shoppers who visit-

The answers to aerosol valve needs are being developed and perfected daily at Precision . . .

THIS MEANS ADDITIONAL PRODUCT SALES FOR YOU!

This new Precision spray valve, in addition to its slanted finger rest has an imprinted arrow in a second color to show the direction of flow.

A Precision stream spout for dispensing any product, regardless of viscousity, that will pour. Currently most toothpaste and syrup manufacturers, are using this practical and attractive unit.

Upside down spout, designed for toppings is far simpler to use than ordinary spouts and in addition is far easier to keep clean. Just lift and hold under the faucet.

This graceful spout has proven to be a profitable way of dispensing pharmaceuticals and cosmetics. Combined with Precisions metering valve, it dispenses a pre-determined amount with a touch.

• At Precision there is a continuing program of research and development, for each day brings new products to be packaged in aerosol containers. The success of aerosols, is based on functional design and attractive appearance for these two go hand in hand to improve dispensing and increase sales.

Perhaps your product, whether it be dispensed as a foam, a spray, a drop or a stream, should be adapted to an aerosol package. Aerosols have proven, an increase in sales because of appearance, economy and simplicity of use. Precision engineers will be most happy to talk with you.

PRECISION VALVE CORPORATION, 700 NEPPERHAN AVENUE, YONKERS, N. Y.

ed the center for the first time. The display was put up without previous publicity to get first hand public reaction. The success of the experiment, however, is expected to result in some local newspaper advertising spotlighting "The House of Aerosols:"

Mr. Pickett said that "The House of Aerosols" was purposely opened without fanfare. "We wanted to test consumer reaction to something new on its own merits rather than through promotion. Promotion, of course, will follow.

"Although aerosols have become big business in the short space of 14 years it is surprising how little the public knows about them, especially about new products.

"The reaction to 'The House of Aerosols' has been astounding: Consumers are amazed to find so many different products in aerosol form.

"Furthermore, when the product has been properly demonstrated and explained, one out of every three consumers will take at least a trial size.

"The first week's operation was done without publicity purposely to check the appeal of the 'cold turkey' approach to people who visited the exhibit. We wanted to find out what consumers thought about aerosols other than generally accepted products."

Demonstrators at the center spray painted initials in bright yellow fluorescent colors; shoes were shined. A salt-water-proof coating was applied to a handsome chrome fog-horn that could make any small boat look like a yacht.

Products demonstrated also included: polishes for furniture or automobiles, to protect chrome finish of cars against corrosion, polish eyeglasses, light fires for barbecues and protect Hi-Fi records against dust and static.

Still other aerosols in the exhibit will clean ovens, mothproof clothes, take adhesive off children's fingers without hurting them and even protect the wound with a sprayed bandage.

In addition, of course, to the primary objective of selling more aerosols, Mr. Pickett listed the following objectives for the Wanamaker centers:

1. To educate the consumer on what aerosols are and what they can do.

2. To train store personnel in proper sales techniques and demonstration of the products.

3. To teach customers how to use aerosols properly.

4. To let customers try the products.

5. To provide a convenient center of information on aerosols.

6. To create acceptance for new aerosols. The consumer by now, of course, is familiar with "push-button" devices for dispensing insecticides, tooth paste and shaving creams.

"These pressure packages," Mr. Pickett said, "are the greatest trouble-savers since the invention of electricity. We haven't scratched the surface yet of all the things pressure packaging can do," he added.

"If you think what we're doing now is wonderful, wait until you hear about some of the ideas for the future.

"Most people seem to think that once they've brushed their teeth, sprayed their hair, and driven the mosquitoes off the patio, they've done about all that a spray-can can do.

"They couldn't be more wrong. We already have more than 200 different pressure packed products on the market, each one performing a separate function and doing it more quickly and easily than it was ever done before.

"There are at least a thousand ways the pressure-package could be used to make life easier for everybody, just as soon as our designers get around to making products, and the public gets around to asking for them.

"That's one of the reasons we have set up 'The House of Aerosols' display at Wanamaker's —so that people can actually see the advantages of pressure packaging, and will tell us what else they would like these products to do.

"How would you like a pressure-pack impact wrench for tightening the bolts on your lawnmower or on Junior's bicycle? We haven't made one yet, but we could. A simple kit . . . hold it in one hand . . . does as good a job on your own do-it-yourself workbench as the factory could . . . and you won't need an expensive compressor to operate it.

"Right now, we're concentrating on the things people want first and want most . . . brass cleaner, copper cleaners, anti-fog sprays for your car windshield, non-skid spray for the underside of those slippery rugs, chocolate sauce, dessert topping, pancake batter. You name it, you can have it."

Regarding the Wanamaker displays specifically, Mr. Pickett said:

"This is an experiment in a new technique for merchandising aerosol products. We are providing both an information center and a demonstration center for aerosol products of all types, the only requirement being that they are high quality, effective and practical in performance.

"This, in effect, is a consumer educational campaign, wherein well-trained sales people not only demonstrate the products which lend themselves to such techniques, but also discuss the pressure-pack products which need some explanation." Products in the display were selected from a representative group of aerosol contract packagers, including Chase Products Co., Broadview, Ill.; Armstrong Laboratories, West Roxbury, Mass.; Stalfort Pressure-Pak Corp., Baltimore; Strouse, Inc., Norristown, Pa.; Thomasson of Pa., Inc., Norristown, Pa.; and Sprayon Products Co., Cleveland.

Mr. Pickett said he was open to suggestions on other products to include in "The House of Aerosols."

(*Turn to Page* 183)

NOW—

THE FIRST GLASS ENCLOSED SANITARY HIGH SPEED LINE FOR PRESSURIZED FOOD PRODUCTS . . .

An all-stainless-steel line for loading pressurized food products in aerosol containers under sanitary conditions is now in operation at Stalfort's modern Pressure-Pak plant. Completely segregated in a glass-enclosed area, this line is dismantled and sterilized before and after each production day. Any food product suitable for aerosol dispensing, even powder, can be economically handled in this area.

Three other high-speed lines are available for loading metal or glass aerosol containers that do not require completely sanitary conditions.

Stalfort, the country's largest filler, can also load liquids, waxes, or creams in conventional glass or metal containers.

JOHN C. STALFORT & SONS, INC.

Established in 1868

321 W. Pratt Street, Baltimore 1, Md.

Aerosol Package Contest

Plans are underway for the Eighth Annual Aerosol Package Award Contest sponsored by the Aerosol Division of the Chemical Specialties Manufacturers Association, New York. Contest winners, including the best aerosol packages in each classification and a "best in the show" package, will be announced and awards will be made at the 46th annual meeting of CSMA at the Mayflower Hotel, Washington, D. C., on Dec. 8th.

Last year there were 11 product classifications which included insecticides, repellents, and moth proofers; room deodorants; paints, enamels, other protective coatings, and paint remover; other household products such as polishes, glass cleaner, rug shampoo; shave product; hair preparations; perfumes, colognes, and toilet waters; other personal products such as body deodorants, shampoos, dentifrices; medicinal and pharmaceutical products; industrial products; and food products. Additional classifications may be added for this year's contest. Complete details and entry forms will be sent to fillers and vendors of aerosol and pressurized packages about Sept. 1st.

There is no charge for entering the contest, which is open to aerosol marketers and/or fillers, whether or not they are members of CSMA.

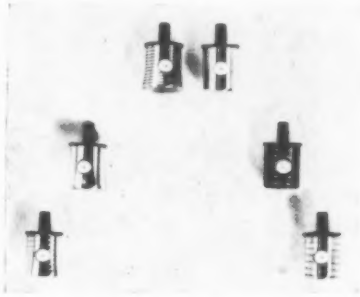
—★—

Allied Awards Aid Grant

General Chemical Division, Allied Chemical Corp., New York, awarded a grant in aid last month of $3,000 to the College of Pharmacy, St. John's University, Jamaica, N. Y., for aerosol research. The research program, under the direction of John J. Sciarra, assistant professor of pharmaceutical chemistry, will be devoted to the study of the solubility and stability of pharmaceuticals in aerosols. The College of Pharmacy is reported to have one of the newest and largest aerosol research laboratories in the country.

New Actuators from France

Six new aerosol valve actuator designs are now being produced by Societe Francaise de Recherches

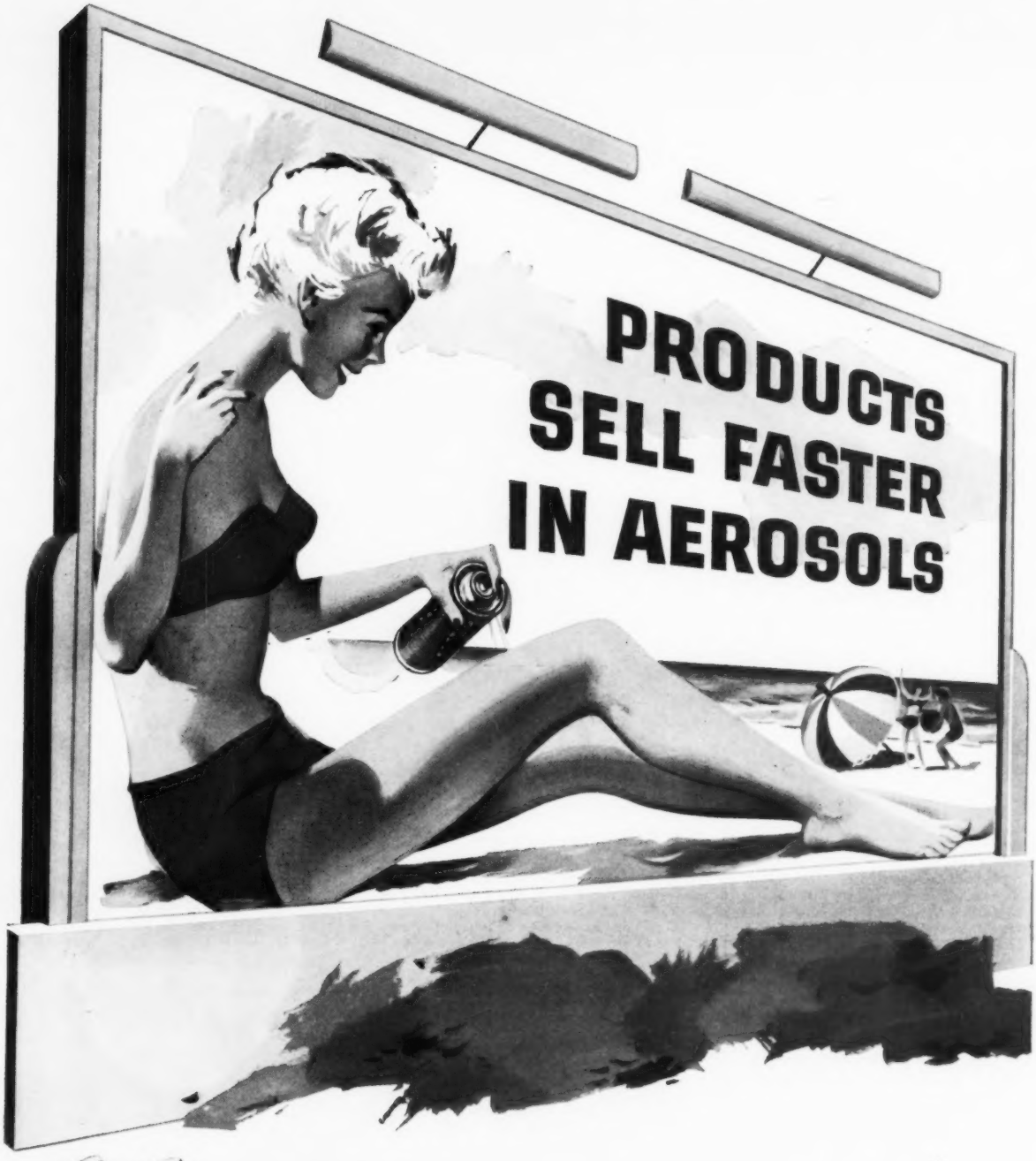


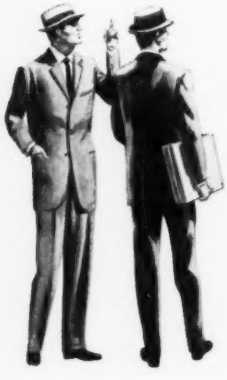
Aerosols, 17 Rue de Joly, Creteil (Seine), France, licensee of Aerosol Research Co., 743 S. Circle, Forest Park, Ill. The actuators are designed for use in dispensing personal products. Three of the actuators have a new flared shape, and the other three have a more formal slim lined effect. Designs vary with linear etchings and black and gold color combinations. Complete information may be obtained from either of the companies.

New pressure packaged disinfectant-deodorant introduced recently by Hysan Products Co., Chicago, under the trade name "Fyte." Packaged by Hysan in 12-ounce Continental can, the unusual product is dispensed through a Precision valve. "Fyte" is designed for use on a wide variety of surfaces including toilet seats, urinals, garbage cans, and in locker rooms, institutions.

A new look for an established product has been accomplished by a new lithographed label for "Kan-Kil" insecticide of Colgate-Palmolive Co., Toronto, Canada. New label design lithographed in four colors: white, green, black and red, blends with a metallic green finish applied to Crown can. Six and 12 ounce cans, in which product is available, are equipped with Precision valves.

Kwik Kafe Coffee Processors of America, Inc., Hatboro, Pa., said to be the largest supplier of coffee concentrate for vending machines, has entered the field of liquid coffee concentrate for home use with a pressure package. Packaged in six-ounce "Spra-tainer" of Crown Cork and Seal Co., the can is said to contain enough concentrate for 20 to 25 cups of coffee.





Ucon brand propellants put action in products

Why don't you discover UCON Propellant service, too?

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UCON and UNION CARBIDE are registered trade marks of Union Carbide Corporation

CONTRACT FILLING / PRIVATE LABEL GUIDE

METERED SPRAY AEROSOL SPECIALISTS

Exclusive, specially designed equipment for fast production of all metered dispensers.

RESEARCH to develop the right product

QUALITY CONTROL to make the package marketable

PRODUCTION to handle small and large volume of all type Aerosol products

Make it a point to talk to "AERO-CHEM" first quality AEROSOL PACKAGING service.

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AEROSOL PACKAGING to fit YOUR PRODUCT

• No minimum run required and no maximum limit! Rigid quality control is maintained on all production, contract filling or custom packaging.

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QUALITY & SERVICE IN AEROSOL CUSTOM FILLING...

STALFORT PRESSURE-PAK CORP.

321 W. PRATT ST., BALTO. 1, MD.

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FLORIDAS' OLDEST CONTRACT PACKAGER

Your product can be packaged in America's fastest growing market AT NO COST TO YOU. The freight saved usually pays the bill.

COMPLETE FACILITIES FOR MANUFACTURING, PACKAGING, STORING, AND SHIPPING LIQUIDS, POWDERS, CREAMS.

LONG OR SHORT RUNS

AVERIL, INC.

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GARD A COMPLETE AEROSOL SERVICE

Product Development • Cold or Pressure Filling • Short and Long Runs • Warehousing • Marketing • Merchandising

FOR FOOD, DRUGS, PAINTS AND CHEMICAL SPECIALTIES

GARD now offers the most complete, most modern filling facilities in the industry for all aerosols from food to paint. Minimum production runs — as low as 1,000 cans to 1,000,000 and up! Air-conditioned, humidity controlled throughout.

GARD INDUSTRIES, INC.
Northfield, Illinois

Complete AEROSOL SERVICE

Small Runs Solicited

Insecticides, Deodorants, Tooth Paste, Shave Cream, Cosmetics, Toiletries, Household & Industrial Products, Powders, Colognes, Plastic Sprays, etc.

• Experts in formulation and development • strict quality control • ample storage • pressure and "COLD FILL" lines • samples and experimental work at no charge • special plan for companies requiring national distribution. Write or phone for details—no obligation

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Enjoy the advantage of G. Barr & Company multiple plant operation and packaging know-how. Unsurpassed research, production and shipping facilities. No finer service available. Contact our nearest plant.

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AEROSOL FILLING

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Also Liquid Filling

Complete research and laboratory facilities
Constant quality control

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YOUR ADVERTISEMENT

in this space would reach prospects for custom filling service from coast to coast for only

$20 per month

YOUR FORMULA

or our specialists will help compound, package or label

aerosols, toiletries, tablets, liquids, food products, etc.

70 years' experience. Quality controls. For details with no obligation, write or call

J. D. GILBERT, President

W. T. RAWLEIGH CO.

Freeport, Ill.

CALIFORNIA'S PROGRESSIVE AEROSOL FILLER

Compare our

★ PRICES

★ QUALITY

and CONFIDENTIAL SERVICE

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FILLS *ALL* PRODUCTS

WESTERN FILLING CORPORATION

6423 BANDINI BLVD., LOS ANGELES

When you market aerosols . . .

Count on Crown

The Crown Spra-Tainer, once an exciting novelty, is now a valuable marketing tool adding new glamor and convenience to a constantly amazing variety of products. Crown is the only source of both seamless and fabricated containers. Thick or thin, watery, oily or foamy—countless fluids, creams and pastes are reaching new market highs with aerosol containers. For expert technical assistance . . . not only in aerosols but in many other types of cans, in closures and in filling machinery . . . Crown's valuable experience is at your disposal.

The pioneer in aerosol cans . . . Crown has more aerosol container experience than any other company in the world.

CROWN

for cans · crowns · closures · machinery

CROWN CORK & SEAL COMPANY, INC., 9300 Ashton Road, Philadelphia 36, Pa.

Mojonnier Appoints Meek

John Meek has been appointed western sales and service representative for Mojonnier Associates, Franklin Park, Ill., it was announced last month by Carter N. LeBeau, sales manager. Mr. Meek moved to his headquarters in the Los Angeles area early this month.

John Meek

With Mojonnier since early this year, he was previously supervisor of production and process engineering for American Safety Razor in LaPorte, Ind., and prior to that was with Plimpton Press, LaPorte. Mojonnier is a division of Kartridg-Pak Machine Co., a subsidiary of Oscar Mayer & Co.

★

Carter Increases Dividend

Carter Products, Inc., New York, recently increased its regular quarterly dividend from 20 to 25 cents per common share. The dividend was payable June 16 to stockholders of record June 5. The previous rate had been in effect since December 1957.

★

PI Forms Aerosol Committee

Packaging Institute, Inc., New York, recently organized an aerosol committee which has established a set of broad objectives to serve as a guide in its forthcoming studies of the aerosol container. Among these objectives are development of definitions and nomenclature of the component parts of the aerosol package; establishment of mutually-satisfactory standards for each of these parts; development of effective test procedures for evaluation of the component parts; and cooperation with other organizations and industries which are concerned with aerosol propellants and aerosol filling techniques.

Like the Institute's 25 other technical committees, the basic function of the new aerosol committee will be to help the user of packaging materials and machinery through the technical committee system of concentrated study in specialized areas.

Temporary chairman of the aerosol committee is Fred T. Pickerell, Schering Corp., 520 Broad St., Newark, N. J., who recently announced that an organizational meeting with the election of permanent officers will take place in September. First regular working meeting of the group is scheduled during PI's National Packaging Forum, Nov. 16-18, Statler-Hilton Hotel, New York.

According to the Institute, much of the work leading to the committee's formation was done by L. H. Zahn, Ciba Pharmaceutical Products, Inc.; W. B. Tibbets, Union Carbide Plastics Co.; and S. D. Smith, Dow Chemical Co.

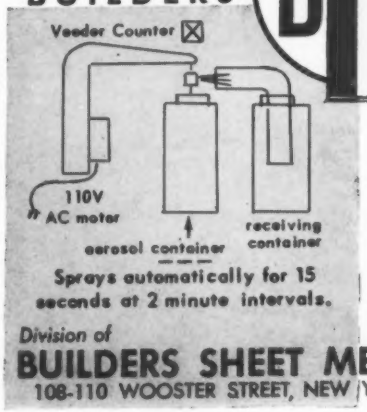
★

Peterson in Committee Post

Harry E. Peterson, president of Peterson Filling and Packaging Co., Danville, Ill., was appointed last month as industry finance chairman of the chemical specialties industry of the United States Committee for the United Nations. The committee, now in its 11th year, is a privately supported citizens' organization whose purpose is to "arouse interest in and disseminate facts about the United Nations and to promote the observance of United Nations Day in the United States." Mr. Peterson is a member of the board of governors and past president of the Chemical Specialties Manufacturers Association.

AEROSOL DISCHARGE RATE DETERMINATION APPARATUS

BUILDERS B P PRODUCTS



Sprays automatically for 15 seconds at 2 minute intervals.

You should know the discharge rate for each valve and actuator you are considering.

If the product is used up too quickly or too slowly, due to an improper valve or actuator, the consumer may not reorder.

Know how many times the actuator will be pushed to expel the contents. Also can be used as an automatic spray unit for checking odorants, deodorizers, insecticides, etc.

Operate all tests with same temperature and number of actuations. Weigh can before and after, this will give you the amount used by each valve or actuator tested.

PRICE $46.50

Model with Electric Counter $56.50

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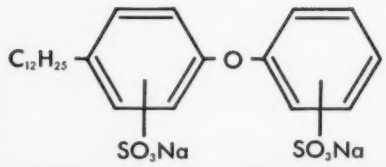

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Unique
new surfactant
may be used in
acids, alkalies, electrolytes,
strong oxidants

Dowfax® 2A1, a new surfactant with a completely new chemical structure, can accomplish many jobs more general type detergents cannot. This is because of its unusual combination of properties. For instance, this detergent is soluble in concentrated electrolytes. It has excellent detergency powers. It also is the only anionic surfactant with outstanding coupling properties.

These facts indicate that Dowfax 2A1 can be used in light and heavy duty detergents. Its medium foaming action means it can be adjusted in formulations to yield high or low foaming characteristics.

Dowfax 2A1 is Dow alkyl diphenyloxide disulfonate, a new type of detergent. Commercial quantities of this product are available from Dow. Technical literature and experimental samples are immediately available. THE DOW CHEMICAL COMPANY, Midland, Michigan, Technical Service & Development Department 502ER7.

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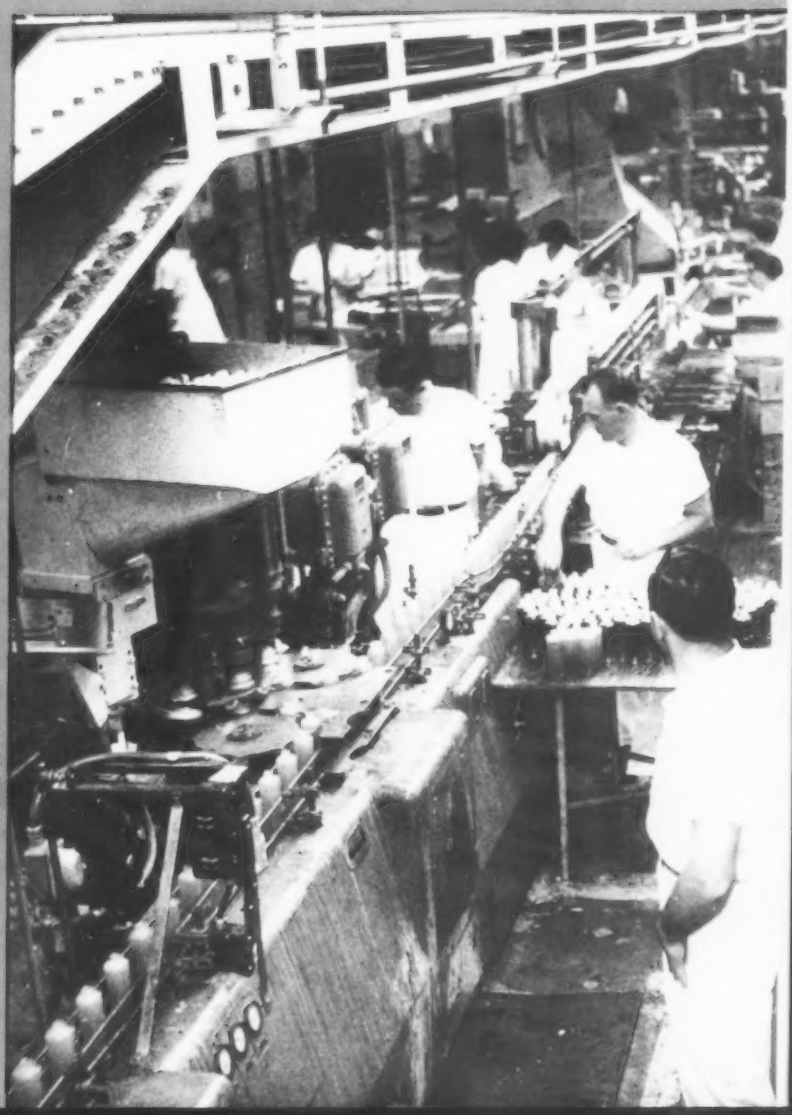
Products and Processes

"Bar Form Detergents"

New Patents

Bulletins and Equipment



New shampoo packaging line recently installed at the West Springfield, Mass., plant of John H. Breck, Inc., features eight individual machines connected by a series of belt conveyors. Installation of the new line cost $160,000. More details on installation on page 163.

"My boy is in business with me now. But he can't even remember when we weren't using Cowles Drymet. DRYMET has been helping us turn out superior detergent formulations for 25 years.

"DRYMET was the first anhydrous sodium metasilicate on the market and it is still the most widely used.

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Bar Form Synthetic Detergents

Tempo increases in marketing of detergent toilet bars, in U. S. and abroad. Ideas on formulations still changing. Most U. S. bar form syndets being made without soap.

POPULARITY of synthetic detergent bars for personal use is growing in Europe, but more slowly than in the United States. A synthetic toilet "soap" appeared on the Western German market about two years ago. These products are currently undergoing extensive field tests in mining establishments and other branches of heavy industry. A synthetic toilet bar being offered to the public in eastern Germany is said to contain heavy proportions of fillers such as metallic oxides or sulfates, or mineral substances.

Switzerland has had a syndet bar for the past two years and quite recently such a product emerged in Denmark under the trade name "De-Ny." The French introduced a synthetic bar—at least for medicinal purposes—some years ago, but no further progress has so far been reported from that country. About the middle of last year a British firm introduced a bar for personal use which contains lactic acid. The product is bound to be synthetic because its pH is acid.

The question whether a soap/synthetic combination or an all synthetic bar is preferable has so far remained unanswered. In the United States "Dove" (Lever) and "Zest" (Procter & Gamble) are soapless. "Vel Beauty Bar" (Colgate-Palmolive) has been changed from a 50/50 soap/syndet formula to an all synthetic product containing plasticizers and builders. Most of the detergent bars currently offered in Europe are fully synthetic.

A combination product protected by British patent 756,502 is shown in Table I. Obviously the proportion of magnesium soap in this formulation is rather high. Even smaller amounts of metallic soaps are known to improve sudsing properties while causing a chalky appearance in the finished product. This is not altogether desirable because it may remind the consumer of heavily filled soaps of undesirable properties.

Table I.

	parts
Detergent sulfonates or sulfates	45
Soap	6
Magnesium soap	24
Sodium chloride	7.2

Bars for general purpose cleaning may be formulated from synthetic detergents and water-insoluble salts of higher fatty acids (U. S. patent 2,781,321).

Soaps and nonionics may be combined into cake or bar form products. One such product incorporates "Nonics" (Pennsalt's polyethylene glycol tertdodecyl thioethers) of the octylphenol type, palm kernel oil fatty acids, lauric acids with glycerine monolaurate, glycerine monomyristate, fatty alcohol sulfates, secondary alkyl sulfates, fatty alcohols, octylphenyl glycerine ether and alkylolamides. These are worked with soap chips into bar form detergents.

"Nonics" and methyl or ethylcellulose ether (in emulsion form) may be combined with soap to make a detergent cake (U. S. patent 2,588,264).

Nitrogenous amino-carboxylic acids, nonionics, and soaps can be worked into a combination bar (U. S. patent 2,805,999). If the sodium salt of N-dodecylglycine is used in such a product it should be incorporated at the rate of 15 parts (German patent application 1,011,555).

The use of 25 to 30 per cent alkylolamides with soap has been discussed in the British literature. Lauric acid or coconut fatty acid diethanolamides were found to answer the purpose. They may be employed in sulfated form if desired. However, the considerable amounts of sodium sulfate present in the sulfated alkylolamides are not desirable in the manufacture of detergent cakes. "Salting out" of the alkylolamides with fatty acids is therefore recommended. This step involves blending the correct amount of alkylolamide sulfates at elevated temperatures with the fatty acid charge for the soap. Small amounts of alcohol or isopropyl-alcohol are added. After thorough blending the mixture is left to separate. The bottom layer contains water and electrolytes, the upper layer consists of detergent, fatty acids, and small amounts of water. The lower layer is drained off, the upper neutralized layer is dried on a drum drier and worked into bars in the usual manner.

A combination suggested in a German patent application (since withdrawn) calls for 67.2 parts of sodium soap, 27.3 parts of coconut fatty alcohol sulfate and 5.5 coconut fatty acid monoethanolamide.

Detergent tablets may be made from 30 to 85 per cent sod-

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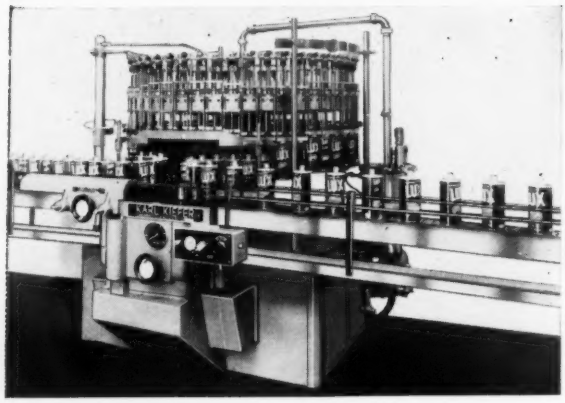

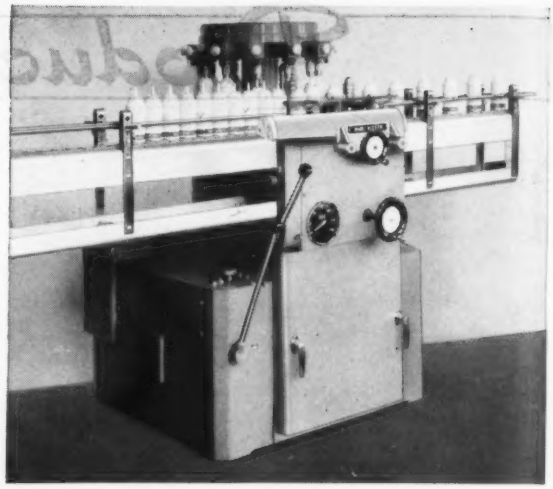

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ium salt of fatty acid aminomethane sulfonic acids, five to 40 per cent potassium or sodium soaps, five to 20 per cent softener and five to 15 per cent water (French patent No. 1,158,383). Another mixed bar contains soap, alkyl-carbamyl-alkane sulfonate, nonionic and anionic sufactants (British patent 1,158,387).

A soap-syndet bar suggested by American authors contains:

	parts by weight
Sodium dodecylbenzene sulfonate	41.3
Sodium lauryl sulfate (sodium tallow/coconut soap 80/20)	15
Calcium stearate	6
Titanium oxide	1.5
Polyethylene oxide gum	2
Water	4
Perfume	0.2

Compounds obtained by condensation of stearic and coconut fatty acids in the presence of alkali have been suggested for the manufacture of synthetic bars. Such products can be adjusted to an acid pH by the addition of lactic acid prior to plodding. Condensates of this type can be formulated with five to 25 per cent soap and formed into tablets. The soap to syndet proportions can be reversed if desired (German patent application 1,006,567).

A method has been described to make salt free "Igepon T" (anionics by Antara) like compounds for use in synthetic detergent bars (German patent application 1,010,970). The excess fatty acids present in these compounds may be left as such to serve as binder in the manufacture of the tablets. As an alternative the surplus fatty acid can be neutralized with sodium or potassium hydroxide which results in soap/syndet cakes.

Esterification of fatty acids with sodium isethionate yields surfactants of the "Igepon A" type, such as sodium lauroyl isethionate, which may be used as active ingredient in detergent bars. Due to their limited water solubility such products are economical in use and produce a "slippery" feeling on the skin like that of soap. Components of such a bar might include:

	per cent
Alkali acyl isethionate (mixture of high & low mol. f.a.)	30-70
Organic amine salt of alkyl-aryl sulfo acid, alkyl sulfuric, or beta-acylamino-ethane sulfonic acid	2-10
Fatty acid C_{12} to C_{25} (palmitic or stearic)	10-40

The fatty acid in this combination may in part be replaced by polyethyleneglycol (German patent application 1,002,492). Up to 25 per cent soap may be incorporated in the mixture.

Synthetic tablets described in German patent 940,312 may incorporate in addition to fillers the following active ingredients: cationics, various anionics such as the "Igepons," fatty alcohol sulfate, alkyl sulfonates, as well as nonionics such as oleylalcohol ethylene oxide condensation products.

Alkylamides included in bar form detergents in proportions ranging from 10 to 50 per cent or more have been mentioned in the German literature. (patent application 1,016,880, withdrawn). In this method synthetics are melted down with higher molecular fatty acids. The mixture is cooled and emerges in bar form from an extrusion plodder.

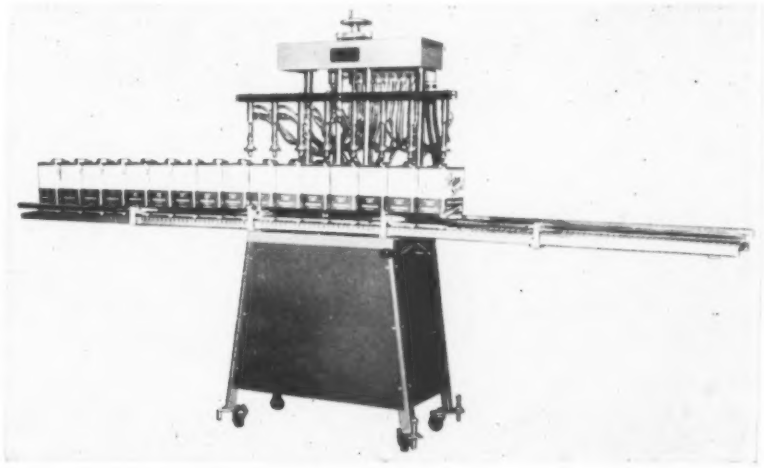
Di- or trialkylolamides may take the place of mono-alkylolamides in detergent tablets for personal and for general use. (German patent application 1,026,906). A milled detergent of this type might consist of 70 parts fatty alcohol sulfate, 10 parts of water insoluble salts of higher fatty acids, 20 parts of a wax or fat mixture, and four per cent trialkylolamide. Detergency of cleaning formulations in general including those in tablet form is boosted by the addition of two to 20 per cent acyclic alkylmono-amines (German patent application 1,034,307).

Swelling in water, which is one of the drawbacks of fatty acid alkylolamides, can be eliminated by using their boric acid esters. (German patent application 1,038,-

(*Turn to Page* 145)

Packer Pressure Filler

A modified gravity filling machine featuring a centrifugal pump and motor for pressure filling of liquid detergents, automotive and other specialties was introduced last month by Packer Machinery Corp., 109 14th Street, Brooklyn 15, N. Y. To speed filling further standard equipment on the pressure filling model includes: one inch spout assemblies for one and two gallon cans, and a 12 foot adjustable roller conveyor equipped with 7/8 inch rollers 10 inches wide mounted on one inch centers, to facilitate handling of two gallon containers.



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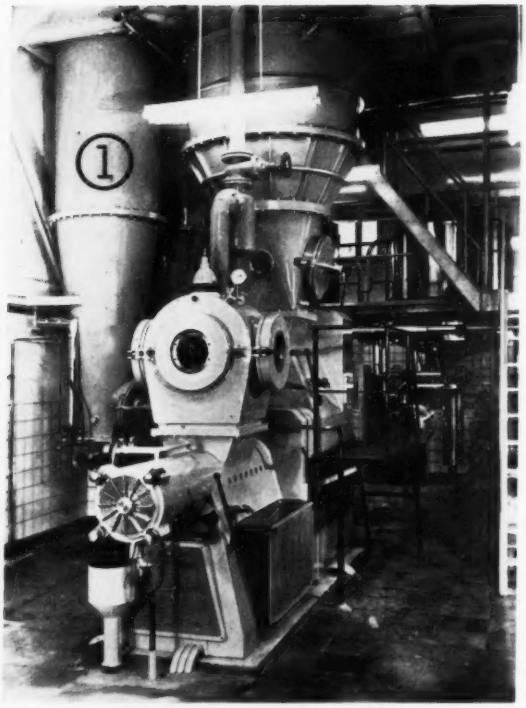

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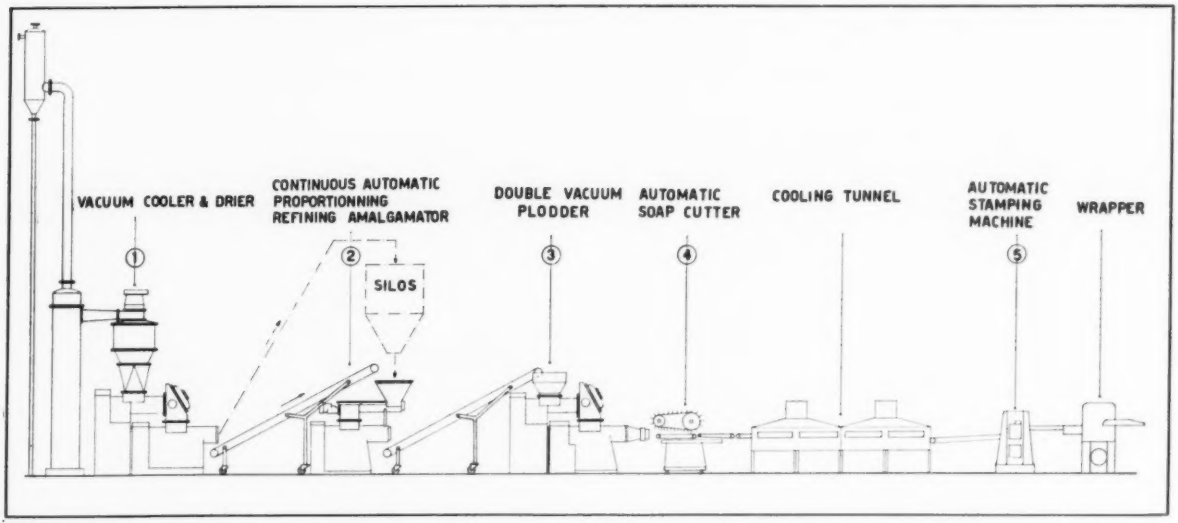
They are extremely flexible: The same plant also can manufacture pure or built household soaps, flake and powder dried base, etc. from 35 to 84% T.F.A. and more.

NEW! SPECIALLY DESIGNED LINES FOR SYNTHETIC TOILET BAR!!



Layout of our continuous toilet soap line. Fully continuous or batch processing possible using chips silos. Our line automatically produces fully refined, first class toilet soap with no roll mills. The individual machines that are employed in the above sketch appear on this and the facing page. A complete line or individual units are available with production capacities of 250 to 1500 Kgs. per hour.

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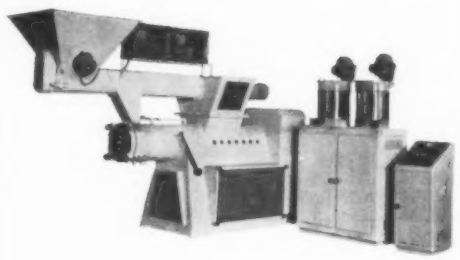
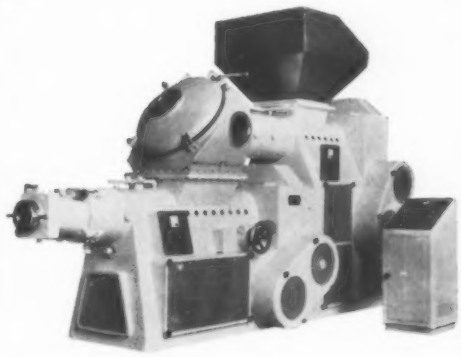


CONTINUOUS AUTOMATIC PROPORTIONING REFINING AMALGAMATOR

3



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Units shown on this page are available individually. They appear as numbered in production line diagram on facing page.

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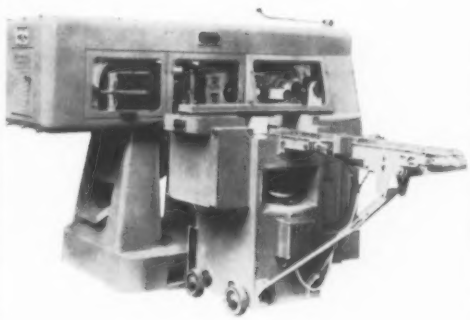

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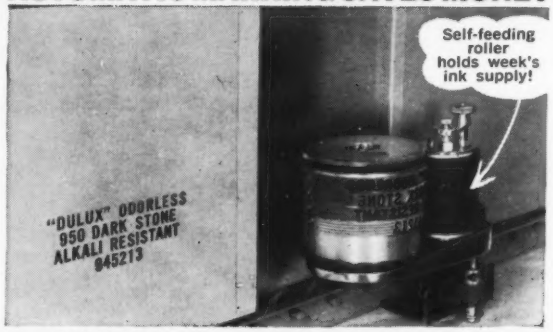

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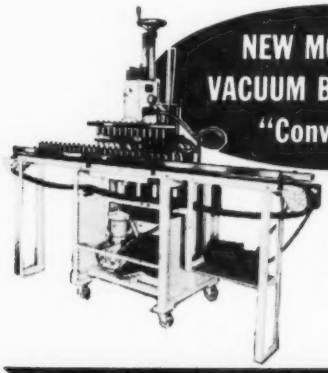

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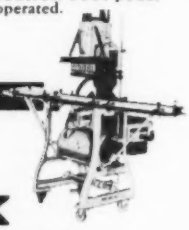

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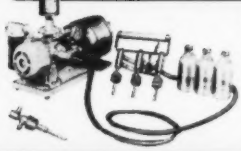

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WRITE FOR CATALOG 58

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(*From Page* 141)

694). These condensation products are obtained by heating boric acids or their anhydrides with fatty acid alkylolamides and removing the water which is liberated. An example of a milled detergent bar contains:

	kilos
Fatty alcohol sulfate (10% by weight water and maximum six % salts)	60
Boric acid ester of coconut fatty acid mono-ethanolamides	12
Palmytil (C_{16}) and stearyl alcohol, 50/50 mixture	6
Paraffin, 50-52°C	15
CMC	12
Perfume	1

The fatty alcohol sulfate is crutched with the other ingredients at 50°C. The mixture is then milled three times, extruded in bar form from a vacuum double extrusion plodder, and finally cut and stamped.

Alfa-sulfonated tallow acids are good starting materials for detergent bars (see *Soap & Chemical Specialties*, Dec. 1957, p. 49). They are obtained by sulfonation of stearic acid or of distilled tallow fatty acids with sulfur trioxide, subsequent washing with aqueous sodium hydroxide solution and neutralization with sodium or potassium compounds or with ammonium or triethanolamine, separately or combined.

Milled detergent bars of desirable foam properties, soap dish life, and hardness characteristics may be made from neutralized sulfopalmitic or sulfostearic acids. Representative bars of good general properties had the following compositions, expressed in mole per cent on an anhydrous basis:

Salts	mole per cent
Bar I	
Monosodium	72
Sodium ammonium	20
Sodium triethanolammonium	8
Bar II	
Monoammonium	85
Ammonium triethanolamine	15

Incorporation of skin protective agents is another point to be considered in the formulation of synthetic toilet bars. Dermal properties should be considered in the choice of the starting materials. Some substances primarily added as foam or detergency improvers may at the same time exert a skin protective action. This effect is claimed for the alkylolamides. Some compounds used as builders are said to have skin protective action. Salt like substances frequently formed as by-products in the manufacture of surfactants should be reduced to a minimum or eliminated entirely from synthetic toilet bars in the interests of good cutaneous properties.

A superfatting agent suggested for detergent bars in an East German patent (DR 7493) contains

	parts
Paraffin hydrocarbons	20
Cholesterol	5
Fatty alcohol (C_{16}-C_{18})	5
Lecithin	3

A 2.7 per cent addition of cholesterol or eucerine has also been recommended for this purpose. Other suggestions for superfatting agents include acetoglycerides, which are mono- or di-acetates derived from triglycerides. These substances act at the same time as plasticizers and reduce the softening of such bars in a humid atmosphere.

Bees wax and lanolin combine skin protective and actual cosmetic activity with action as builders. Carnauba wax, spermaceti and cetyl alcohol are good for the skin and are used in the manufacture of syndets for a variety of other reasons. Stearic acid which is used in bar form detergents as a builder is said to act as an anti-irritant. Non-irritating synthetic toilet bars might contain

	parts by weight
Sodium lauryl sulfonate	65
Stearic acid	30
Water	5

The ingredients are blended at 60°C, milled and worked into bars.

Polyethylene oxide resins are suggested as plasticizers and as improvers of the skin "feel" of syndet bars. These high molecular polymers of ethyleneoxide are added at the rate of one to two per cent.

Diethylene glycol fatty acid esters are used as binders and superfatting agents. Polyethylene glycol fatty acid esters exhibit similar properties.

Synthetic phosphoric acid esters are suitable for use in skin care and in detergents. A variety of such compounds can be synthesized; they are related to lecithin in their composition.

Adjustment of syndet bars

(*Turn to Page* 166)

Ultrafine Grinding Mill

Abrasives, fillers, insecticides, and waxes and fatty acids are among the materials which may be ground to particles below 44 microns in a new tungsten carbide lined "Micronizer" developed by Sturtevant Mill Co., Harrison Square, Boston 22. These fluid energy mills process severely abrasive materials down to several microns without attritional heat.

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Ⓒ U. S. SIPHON FILLER. Adjustable for all containers, all liquids including foamy products or products that do not permit agitation. Stainless steel tubes; glass lined tank. Request "Siphon Bulletin".

✓ *AIR BOTTLE CLEANER. Semi-automatic. Companion unit to semi-automatic fillers. Air cleans up to 40 containers per minute. Request "E-Z Bulletin."*

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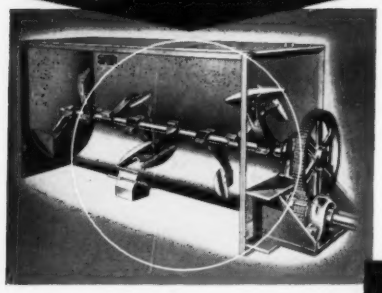

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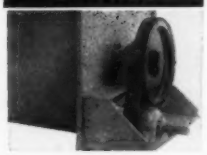

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NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine: — MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

No. 2,870,092. Polyphosphate Compositions Containing Tallow Methyl Tauride and 2-Mercaptothiazoline, patented by Edgar E. Ruff, Bergenfield, N. J., assignor to Lever Brothers Co., New York. The invention consists of a spray-dried detergent composition comprising from about 20% to about 50% of an alkali metal tripolyphosphate which in aqueous solution tarnishes German silver, from about 5% to about 15% total of at least one organic nonsoap detergent other than an alkali metal tallow methyl tauride selected from the group consisting of organic anionic nonsoap detergents and organic nonionic nonsoap detergents, from about 10% to about 20% of an alkali metal carbonate, about 10% of an alkali metal silicate, from about 0.03% to about 0.06% of 2-mercaptothiazoline based on the weight of tripolyphosphate, and from about 1.4% to about 8.6% of an alkali metal tallow methyl tauride based on the weight of the tripolyphosphate; the amounts of said thiazoline and tauride being sufficient to inhibit the tarnishing and the components of the composition being expressed by weight at the time of mixing thereof and prior to spray drying.

No. 2,883,090. Atomizing Apparatus, patented by Roger Remane, Courton-le-Bas, France, assignor to Rene Maurice Achille Joseph Pollet, Paris, France. This patent describes a metallic atomizing container for the projection of aerosol products, dissolved and suspended in a liquefied gas, an annular bulge inside the neck, a stop valve located in said neck and including a piece in the shape of a conical upwardly wide-mouthed cup, made of a rigid plastic, said cup having an aperture in its bottom, a tube extending inside the container fixed in said aperture, the edge of the lower face of said cup resting upon said inner annular bulge of the neck, a second piece constituted by a membrane made of a flexible plastic provided on its lower face, near its edge, with sharp edged circular ribs forming tightening joints and bearing on the edge of the rigid cup and the inner surface of the neck, said membrane having a central aperture forming a seat on its upper side, a valve member cooperating with this seat and provided with a stem extending through the aperture in the seat and fixed by its lower end on the rigid cup, a piece in the shape of a hood fixed on the upper face of the membrane round the valve seat, provided with an atomizing port and means to clamp in a tight way the valve body against the inner bulge of the neck, said means including the inwardly bent upper edge of the neck of the metallic container against the annular edge of the upper face of said flexible membrane.

No. 2,874,123. Process for the Preparation of Granular Compositions, patented by Bernard Richard Schaafsma, Midland Park, N. J., and Olev Ratsep, New York, assignors to Colgate-Palmolive Co., Jersey City, N. J. A process is patented comprising forming a flowable paste of hydratable alkali metal inorganic salt in a quantity at least adequate to take up as water of hydration substantially all of the water to be added, water in an amount sufficient to form a flowable paste, and a granulating agent consisting of a polar organic compound having alcoholic hydroxyl as the only polar radical therein and having a molecular weight of about 150 or greater, said granulating agent being present in a quantity sufficient to cause the formation of semi-solid nodules on mixing and aeration of said flowable paste, mixing and aerating said flowable paste until semi-solid nodules have formed therein, and thereafter quiescently aging said nodule-containing mixture to produce a rigid friable mass of coherent apparently dry spheroidal agglomerates.

No. 2,884,355. Insect Repellent Composition Comprising a Diethyl, Di-N-Propyl or Di-N-Butyl Pyridine Dicarboxylate, a Stabilizer and a Method of Use, patented by Lyle D. Goodhue, Bartlesville and Kenneth E. Cantrel, Dewey, Okla., assignors to Phillips Petroleum Co. An improved fly repellent composition is covered comprising about 1 part by weight of a dicarboxylate selected from the group consisting of diethyl-, di-n-propyl-, and di-n-butyl pyridine dicarboxylates and about 1 to 10 parts by weight of a stabilizing compound selected from the group consisting of N-ethylhexyl bicyclo [2.2.1]-5 heptane-2,3-dicarboxyimide and 1[2,5,8-trioxadodceyl] - 2 - propyl - 4,5 - methylenedioxybenzene.

An improved fly repellent composition is also claimed comprising about one part by weight of diethyl pyridine dicarboxylate and about two parts by weight of n-octyl 3-(3,4-methylenedioxybenzene) propyl sulfoxide.

No. 2,867,564. Halogenated Bicycloheptenyl Sulfite Derivatives, patented by Sidney B. Richter, Chicago, assignor to Velsicol Chemical Corp., Chicago. Described is a composition of matter having the general formula:

$$R-(CH_2)_z-O-\overset{O}{\overset{\|}{S}}-O-(CH_2)_z-Y$$

wherein R is a bicyclo(2.2.1)-3-heptenyl radical containing from 4 to 6 halogen atoms selected from the group consisting of chlorine and bromine, χ is an integer from 1 to 4, z is an integer from 2 to 4, and Y is a halogen atom selected from the group consisting of chlorine, bromine and fluorine.

No. 2,870,093. Polyphosphate Compositions Containing Coco-Beta-Alanine and 2-Mercaptothiazoline, patented by Edgar E. Ruff, Bergenfield, N. J., assignor to Lever Brothers Co., New York. This patent claims a spray-dried detergent composition comprising from about 20% to about 50% of an alkali metal tripolyphosphate which in aqueous solution tarnishes German silver, from about 5% to about 15% total of at least one organic nonsoap detergent selected from the group consisting of organic anionic nonsoap detergents and organic nonionic nonsoap detergents, from about 10% to about 20% of an alkali metal carbonate, about 10% of an alkali metal silicate, from about 0.03% to about 0.06% of 2-mercaptothiazoline based on the weight of tripolyphosphate, and about 0.8% of an alkali metal coco-β-alanine based on the weight of tripolyphosphate; the amounts of said thiazoline and alanine being sufficient to inhibit the tarnishing and the components of the composition being expressed by weight at the time of mixing thereof and prior to spray-drying.

No. 2,874,126. Hair Shampoo, patented by Solomon Epstein, Chicago, Charles F. Fuchs, Evanston, and Martell M. Gladstone, Chicago, assignors to Emulsol Chemical Corp., Chicago. The invention covers an improved soapless shampoo, having a liquid to paste consistency, consisting of a mixture of at least one detergent selected from the group consisting of: (1) water-soluble salts of sulfuric acid esters of aliphatic alcohols containing from 8 to 18 carbon atoms; (2) water-soluble salts of sulfuric acid esters of aliphatic polyhydric alcohols incompletely esterified with fatty acids containing from 8 to 22 carbon atoms; (3) water-soluble salts of alkylated aromatic sulfonic acids wherein the alkyl group contains a chain of from 8 to 22 carbon atoms; (4) water-soluble salts of higher molecular weight alkylated aromatic hydroxy-alkyl sulfuric acid esters wherein the higher molecular weight alkyl radical contains from 8 to 22 carbon atoms; (5) sulfonated castor oil; (6) condensation products of hydroxy-alkyl amines with fatty acids containing from 8 to 18 carbon atoms and wherein the molar ratio of the hydroxy-alkyl amine to the fatty acid is not substantially less than 2 to 1; and (7) polyoxyalkylene glycol ethers of alkylated aromatic compounds in which the nuclear alkyl group contains from 8 to 18 carbon atoms; said detergent comprising from about 8% to about 30%, by weight, of said shampoo; from about 1% to about 6%, by weight of said shampoo, of the oleic acid amide of isopropanolamine; and water, the water being present in amounts not substantially below 50%, by weight, of said shampoo, said shampoo being free from soaps.

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148

Products and PROCESSES

New Protective Lotion

A new protective hand lotion for industrial use was recently introduced by Vanfaire Co., 10732 Riverside Drive, North Hollywood, Calif. Tradenamed "Vanfaire," the product is said to afford protection against oils, solvent, various chemicals and other allergenics and irritants. It incorporates an antihistaminic in addition to an antiseptic.

Protection is said to last up to 12 hours. The lotion is soluble in soap and water.

—★—

Automated Phosphate Test

Phosphate concentrations down to 0.50 ppm may be determined continuously and automatically with the "AutoAnalyzer", according to a methodology sheet just published by Technicon Controls, Inc., Chauncey, New York. The determination is based on the reduction of a phosphomolybdate to molybdenum blue by 1-amino-2-naphthol-4-sulfonic acid.

All steps of the analysis are integrated into a continuous flow system, said to combine accuracy with reproducibility. With minor modifications the equipment may measure concentrations down to 0.01 ppm, according to the manufacturer.

The information sheet available from Technicon includes flow diagrams and typical recordings and calibration curves.

—★—

Syndet Advances Abroad

Sudsing at relatively low temperatures is claimed for sulfated and sulfonated anionic detergents containing small amounts of a limited group of amides. Sudsing characteristics are improved at temperatures as low as 60°F. Brit. patent No. 809,060.

Resistance to caking in storage and to formation in use of hard-to-dissolve gels is claimed for detergents consisting of a water-soluble alkaline condensed phosphate, a water-soluble condensed alkali metal silicate, and chlorinated trisodium phosphate. Such compositions are said to be particularly suitable for use in dishwashing machines. Brit. patent No. 809,102. Both patents were granted to Thomas Hedley & Co., Newcastle-on-Tyne, Feb. 18, 1959.

A detergent compound exhibiting a pH within the range of 7-9 in aqueous solution at a temperature of 50°C and a pH up to 9.4-11 at temperatures ranging from 80 to 100°C is described in a patent granted to Akiebolaget Henkel-Helios, Stockholm, Sweden. The product consists of a nonionic or anionic synthetic detergent, an alkali metal phosphate, and magnesium oxide. The above pH properties are achieved by adding the correct proportion of magnesium oxide in form of a powder, particles of which are coated with a substance melting at 50° to 60°C. Brit. patent 810,151.

—★—

Carbide Amines Booklet

Information on 19 alkyl and alkylene amines has just been published by Union Carbide Chemicals Co., 30 East 42nd Street, New York in the form of a 54-page brochure. Alkyl amines are intermediates for specialty soaps, corrosion inhibitors, insecticides, herbcides, and other chemical specialties.

Alkylene amines are intermediates for fungicides, herbicides, corrosion inhibitors, chelating agents, and other industrial and consumer specialties. In addition to established uses the booklet gives experimental and potential applications for these compounds.

Physical properties and shipping data pertaining to the amines are presented in tabular form. Vapor pressure and solubility data are given in 15 physical property charts. Specifications are tabulated and test methods are given. Information on physiological properties, and on storage and handling is included. A bibliography is appended.

—★—

Antiseptic Tissues

Unwoven cellulose crepe handkerchiefs are rendered antibacterial by impregnation with metallic salts of benzoic acid or chlorinated phenol. The chemicals are applied either in vapor form or by spraying. The method of treating the tissues is protected by British patent 810,659; Vereinigte Papierwerke Schickedanz & Co., Nuernberg, Germany.

—★—

Modern Soap Processes

The basic principles of saponification are discussed and modern continuous soap-making processes are compared in an article by Leo D. Jones of Sharples Corp., Philadelphia in the May 1959 issue of *Soap, Perfumery, and Cosmetics*. Both the Monsavon process and the Unilever process employ high dispersion of fresh mixtures of fat and caustic soda for the purpose of reducing the time of the induction period. Both methods use mild agitation for the completion of the reaction. The Sharples and De Laval processes carry on saponification in a circulating soap mass, thus eliminating the induction period.

Monsavon, Unilever, and De Laval feature one-stage saponification. An excess of caustic must exist at the exit to ensure complete saponification and a further excess must be used to allow for random variations in the performance of the metering devices, according to the author. Experience has shown, he points out, that an excess of approximately four per cent of the total amount of caustic required for saponification must be used in a single stage process. The use of two stages in the Sharples process ensures complete saponification of the fat in the presence of an excess of caustic and a substantially com-

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plete utilization of the caustic soda in the presence of an excess of fat. This saving of reagent in the two-stage process is attained at a higher capital cost, according to Mr. Jones.

No heat is added to the Monsavon, Sharples, and De Laval systems, other than the heat in the fat and caustic as they enter the process. Normally the caustic enters at room temperature. The final temperature depends entirely upon the temperature at which the fat is introduced into the system, the heat of saponification, and the heat of dilution of the caustic soda.

The temperature conditions in the Unilever process are not as clear since the emulsification is carried out by a steam jet. Some of the steam is condensed and some passes off uncondensed. However, in this, as in the other continuous sytems, all of the heat of saponification and dilution of the caustic is available.

All four of these continuous processes provide for saponification to be followed by washing in salt solution for glycerine recovery. Monsavon and Unilever use gravity settling and Sharples and DeLaval feature centrifuges for the separation in the washing stages.

—★—

Specific Gravity Gauge

A new instrument for continuous measurement of liquid specific gravity is described in a bulletin published last month by Schutte and Koerting Co., Cornwells Heights, Bucks Co., Pa. Problems of sampling technique and delays in obtaining the information required which may occur in manual sampling are eliminated by this device.

The liquid flows through the specific gravity indicator in a continuous stream, contacting a float type hydrometer and thermometer, which supply continuous specific gravity and temperature readings.

A picture, diagram and detailed description are given in the bulletin, which also explains how the instrument works and how it should be installed.

Buschman Products Moves

Buschman Products, Inc., has relocated its office at 114 East 40th St., New York 16, it was announced recently by N. H. Buschman, president. The company manufactures the "Jet-Mogenizer" mixing unit.

Mr. Buschman also announced the introduction of a new line of "Jet-Mogenizer" units including four different models with capacities ranging from 150 to 500 gallons per hour. Designated as model numbers 10, 15, 20, and 30, the units are designed to produce impact, attrition, turbulence, and ultrasonic cavitation by varying the number of splines in the rotor and stator. Space between the rotor and stator may be varied. The units are said to be self-cleaning by passing water on a suitable solvent through the machine while it is running.

—★—

New Fairfield Booklet

Fairfield Chemicals Div., Food Machinery and Chemical Corp., 441 Lexington Ave., New York 17, manufacturer of "Pyrenone" insecticide bases, has prepared a six-page booklet for manufacturers, fillers, and packagers of aerosols and other pressurized insecticides, as part of its check list series. Included in the brochure are a series of fully tested basic formulations as well as label suggestions, and a glossary of chemical and trade names to guide in the preparation of labels. Formulations listed in the guide, which is available upon request, include those designed to meet specific requirements, such as non-toxic, household fly, low cost, roach, and ant sprays.

—★—

Gas Data From Airco

Nitrogen and carbon dioxide are among the industrial gases described in a 30-page illustrated booklet just issued by Air Reduction Sales Co., 150 East 42nd Street, New York 17. Properties, production method, applications in industry, shipping information and other pertinent facts are included for each of the gases described.

—★—

New Non-Ionic by Sole

A new 100 per cent tall oil ethoxylate is described in a technical bulletin issued by Sole Chemical Corp., 27 East Monroe Street, Chicago 3. Trade named "Sole-Terge Toe," the nonionic surfactant is designed to serve as base for low sudsing detergents including automatic laundry and dishwashing compounds and heavy duty industrial cleaners. The new product is stable in both strong acid and alkali products, according to the manufacturer.

Sole recommends the new surfactant as an additive to wettable powders to aid water dispersibility and to improve powder flow; as a dedusting and anti-caking agent for dry powders; as an emulsification aid in pesticides; and for a number of other industrial and specialties uses.

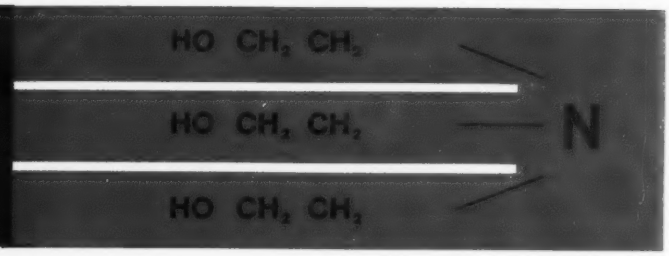
Two automatic laundry detergent formulations are given in the bulletin:

	I	II
	per cent	
"Sole-Terge Toe"	13	15
Sodium metasilicate	10	10
Soda Ash	20	39
Sodium tripolyphosphate	25	35
Sodium sulfate	30	—
CMC	1.9	1
Optical Brightener	0.1	—
	100	100

A floor tile cleaner is suggested containing 15 per cent "Sole-Terge-Toe"; four per cent borax; and 81 per cent water.

IF YOU USE

tri



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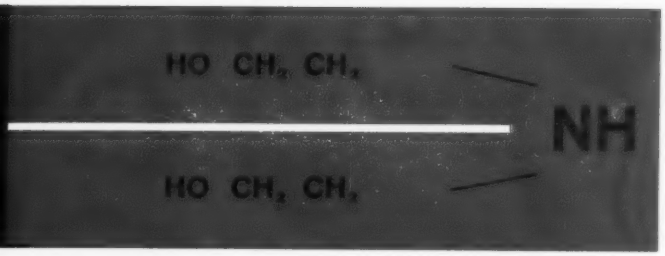

DON'T OVERLOOK

mono

It won't hold for everybody, but in some applications where di- or triethanolamine is being used, there are positive advantages to be gained from switching to mono-. For example, MEA can frequently be used advantageously as the amine in amine soap emulsifiers for such products as cutting oils, weedicides, waxes and buffing compounds. In some instances total amine required is reduced to the extent that cost is reduced. In some cases mixtures of MEA and TEA are better than either alone.

MEA may improve performance while TEA maintains a lower pH.

If your product or process now utilizes DEA or TEA, it may pay you to evaluate MEA. Allied makes all three, and will give you technical suggestions that may help you reduce costs, improve efficiency or make a better product. Write for any technical assistance you need.

For specifications and local offices, see our insert in Chemical Materials Catalog, pages 435-442 and in Chemical Week Buyers Guide, pages 35-42.

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New Acrylic Polymer for Polishes

A NEW acrylic copolymer emulsion for use in floor polish formulations has just become available in commercial quantities from Rohm & Haas Co., Washington Square, Philadelphia 5. Good hardness, gloss, initial color and color retention properties are claimed for films, cast from polishes compounded with the new polymer. Tradenamed "Rhoplex B-78" the emulsion is said to impart good water resistance combined with removability by alkali to the finished product. Continuous films are formed at low temperatures and are claimed to approach in hardness conventional lacquer and shellac films. They are resistant to blocking and dirt pickup without being excessively brittle or subject to powdering, says Rohm & Haas.

A high degree of compatibility with a wide range of waxes and alkali soluble resins (including shellac) is claimed for "Rhoplex B-78". Addition of wax increases the flexibility of the cast film and enhances its inherent resistance to powdering. Conversely, addition of alkali-soluble resin usually embrittles the film and should be limited to the minimum needed to ensure good leveling and removability characteristics, according to Rohm & Haas.

Wide differences in water resistance exist among alkali-soluble resins. Loba C gum was found particularly water resistant, whether used by itself or in blends. Removability of the final formulation is usually ensured by incorporation of 10 to 15 per cent alkali soluble resin, which must not oxidize or change chemically on aging. Wax selection also has a bearing on removability. "Duroxon J-324" (Dura Commodities Corp., New York) has some inherent alkali sensitivity.

Flexibility can be improved also by addition of a relatively soft polymer such as "Rhoplex B-60-A". Such additions should, however, be kept below 10 per cent (based on B-78 solids) to avoid incompatibility and lowered scuff resistance.

The inherent leveling properties of "Rhoplex B-78" are further improved by addition of alkali-soluble resin (10 per cent usually suffices), careful selection of the amine used in emulsification of the wax (e.g. triethanolamine for part of the base) as well as by judicious use of surfactants. Fluorinated hydrocarbons such as "FC-128" (Minnesota Mining & Manufacturing Co., St. Paul) are suggested as levelling aids. "KP-140" (Ohio Apex Division, Nitro, W. Va.) is also effective if used with discretion.

To prepare polish "Rhoplex B-78" should be diluted to 14 per cent solids, although other solids levels may be used. Floor polish ingredients should be added in the order listed in the above examples. "FC-128" and "KP-140" should be added last. The pH of the final formulation should be adjusted to the range of 8.9 to 9.2. This is the optimum range for freeze-thaw stability. Higher pH levels may cause lower initial gloss.

Stirring of the mixture should be continued for 30 minutes to insure complete incorporation of "KP-140". The mixture should be allowed to stand at least 16 to 24 hours before testing.

Samples of "Rhoplex B-78" modified acrylic copolymer emulsion for floor polishes and further pertinent data are available from Rohm & Haas' Resinous Products Division.

Suggested General Formulations
parts by weight

Components (adjusted to equal solids level)	Self-polishing, non buffable, household type	Self-polishing, moderately buffable	Highly buffable
"Rhoplex B-78"	70 - 80	55 - 65	40 - 50
Wax	10 - 20	25 - 35	40 - 50
Alkali soluble resins	10 - 20	10 - 20	10 - 20

Suggested Starting Formulations
parts by weight

Component 14% solids	Self-polishing, non buffable, household type Formulation #42	Self-polishing, moderately buffable, Formulation #43	Highly buffable Formulation #44
"Rhoplex B-78"	72.5	57.0	44.0
Emulsified polyethylene "AC-629" (Semet-Solvay)	11.0	28.5	44.0
Shellac*	16.5	14.5	12.0
Other additives			
"FC-128" (1% solids)	1.8	1.8	1.8
"KP-140" as supplied	0.4	0.4	0.3

* "Durez 15546" (Durez Plastics Division, N. Tonawanda, N. Y.) may be used in place of shellac.

★

Automatic Water Softener

A new line of commercial and light duty industrial automatic water softening equipment has just been announced by Water Refining Co., 104 Manhattan Street, Middletown, O. "Miracle" water conditioners come in capacities ranging from 30 to 180 gallons per minute, based on 40 p.s.i. The units use "White Dowex" (Dow Chemical Co.) synthetic ion exchange resin. Hardness, rust, iron, and turbidity are removed on a continuous basis. Multi-bed design permits alternate bed regeneration. The units feature a patented five-cycle valve and electronic selector which eliminates floats and brine valves.

Initial cost of these units is claimed to be low. Economies in salt and in service cost are said to be effected by installation of this equipment. A four-page illustrated folder is available giving specifications and other pertinent details.

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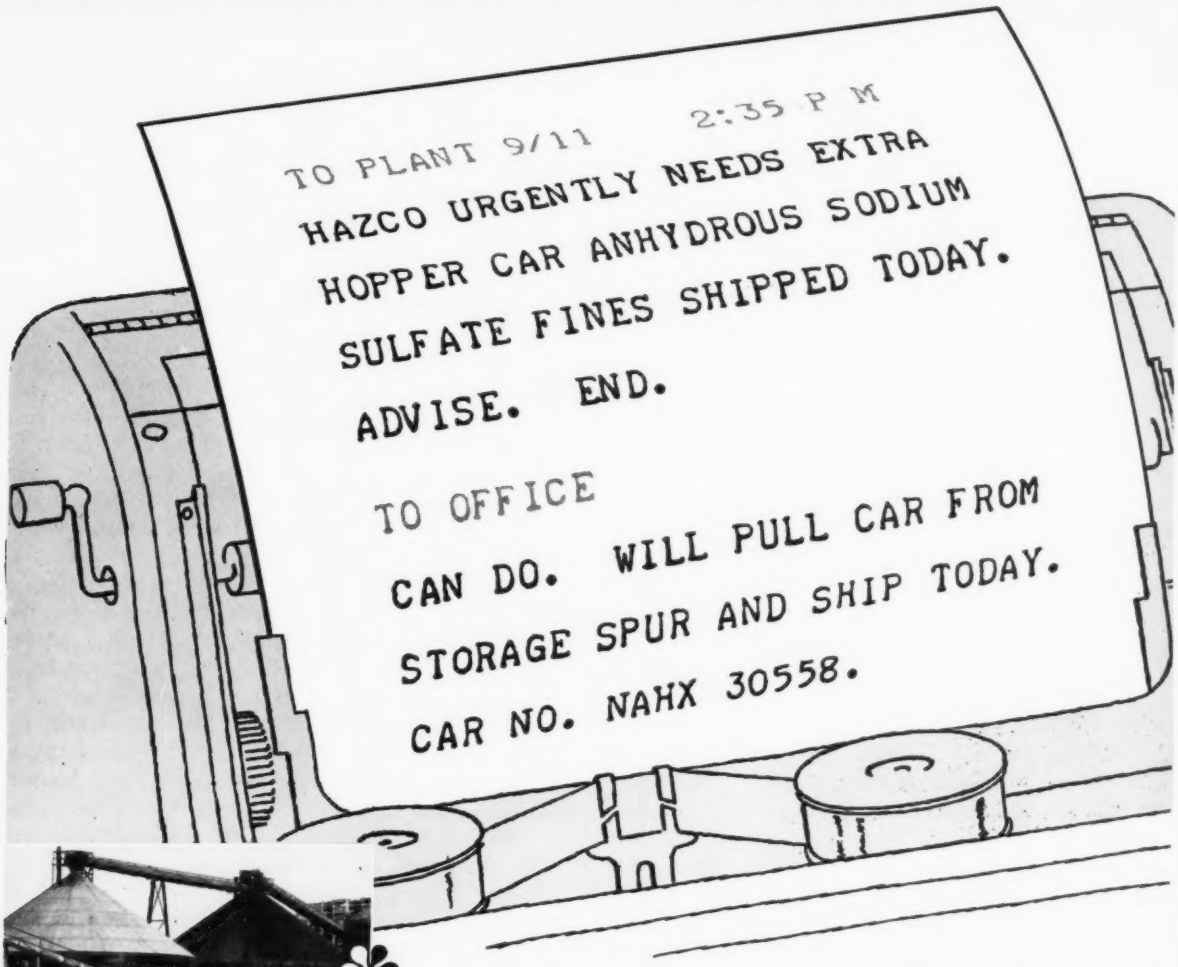
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CAN DO. WILL PULL CAR FROM
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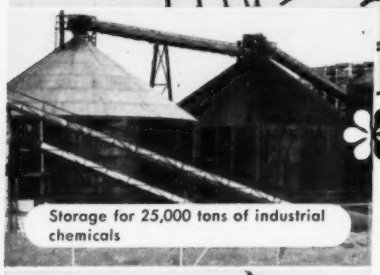

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Kennington Joins Vestal

* * *

Lever Cambridge Unit to Close

* * *

Carl Fuller General Manager

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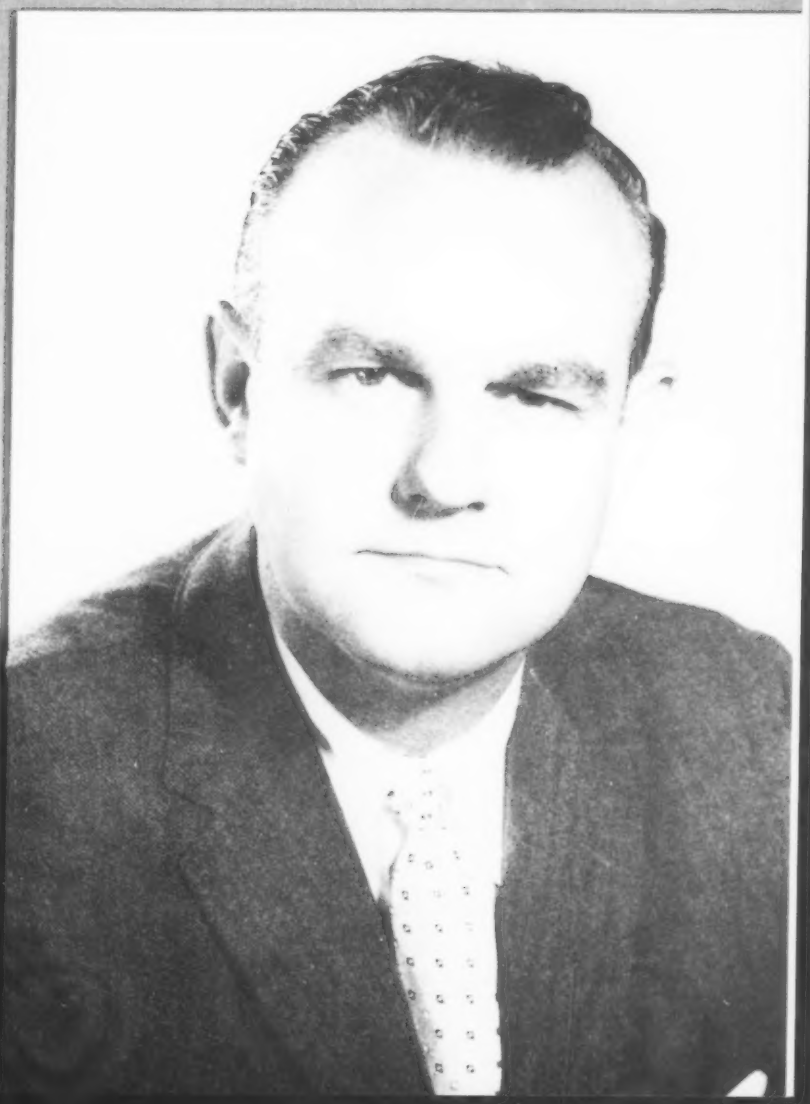
Fels Appoints Melnicoff



Edgar W. Nelson. one time assistant to the president of Lever Brothers Co., has just been named to the newly created post of general manager of the Lehn & Fink division of Lehn & Fink Products Corp., New York. He was previously with Market Planning Corp.

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News

Kennington Joins Vestal

Henry A. Kennington has joined Vestal, Inc., St. Louis, as vice-president and director of sales,

Henry A. Kennington

it was announced last month by Frank J. Pollnow, Jr., president. He replaces James L. Martine who has been advanced to executive vice-president. Previously Mr. Kennington was regional sales director in the midwest for Crown Cork and Seal Co., Philadelphia. In his new position he is responsible for national sales activity of Vestal's line of surgical soaps, germicides, waxes, floor finishes, cleaners and maintenance products for industrial and institutional use.

—★—

Lehn & Fink Names Nelson

Edgar W. Nelson has been named to the newly created position of general manager of the Lehn and Fink division of Lehn and Fink Products Corp., New York, it was announced early this month by Edward Plaut, president. Since 1956, Mr. Nelson has been senior vice-president of Market Planning Corp., an affiliate of McCann-Erickson, Inc., New York. In his new position he directs the division's overall administration, including sales, merchandising, advertising, and promotion. Before joining Market Planning Corp., Mr. Nelson was assistant to the president of Lever Brothers Co., New York, in a sales management capacity. Prior to that he was a maketing consultant for Booz Allen and Hamilton, Chicago.

—★—

National to Change Name

National Disinfectant Co., Dallas, Tex., announced plans last month to change its name to The National Chemsearch Corp. The company, which is 40 years old, manufactures and distributes sanitary and maintenance chemicals.

According to company officials, only a small portion of the firm's volume is in disinfectants which makes the old name misleading.

—★—

Purex Elects La Roche

The election of Charles E. La Roche to the board of directors of Purex Corp., Ltd., South Gate, Calif., was announced last month by A. C. Pelletier, board chairman. The election took place at the board's regular May meeting.

Mr. La Roche is president of Franklin Research Co., Philadelphia, which was recently acquired by Purex (see *Soap and Chemical Specialties*, June 1959, page 163).

—★—

Anthony Cirino Dies

Anthony Cirino, 50, metropolitan sales manager of the industrial chemical sales division of West Virginia Pulp and Paper Co., New York, died June 23rd at the Holy Name Hospital, Teaneck, N. J. Starting with the company at the age of 14, Mr. Cirino became a pioneer in the distribution of chemical by-products of the paper industry and an authority on industrial uses of tall oil. He was a member of the Chemical Specialties Manufacturers Association, Salesmen's Association of the American Chemical Industry, the Pulp Chemicals Association, and Fatty Acids Producers Council.

Fels Appoints Melnicoff

The appointment of David C. Melnicoff as director of planning for Fels & Co., Philadelphia,

David B. Melnicoff

beginning July 1st was announced recently by Cyril G. Fox, president. Mr. Melincoff, an economist and marketing analyst, continues as a director and member of the finance committee. Previously he was business analyst and manager of economic analysis for the Pennsylvania Railroad Co. He is currently active in several civic groups concerned with economics.

—★—

Oakite Sales Changes

Two transfers and two appointments in its technical field service organization were announced last month by Oakite Products, Inc., New York. Ben P. Fortin, who has been with the company for nearly 20 years, has been transferred to the Oakite staff in Los Angeles. Previously he was assigned to Tyler, Tex. His post in Tyler has been filled by Henry L. Jones who recently joined the company.

In another transfer, J. G. Hickey has been assigned to Sacramento Calif., from his post in San Francisco where he served for the past five years. Wayland E. White has been appointed to the Corpus Christi, Tex., territory.

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CARDIS POLYMER #8

The demand for high-gloss floor polish that assures longer wear with less care is increasing fast. That's why the demand for Cardis Polymer*8 is increasing fast!

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John T. Stanley Co. Acquires Sapolio Name

THE acquisition of the trade mark of Sapolio Products, Inc., New York, successor to Enoch Morgan's Soap Co., by John T. Stanley Co., New York, was announced June 4th by Nils S. Dahl, general manager of Stanley.

John T. Stanley Co., which has been manufacturing toilet soap, laundry soaps and industrial cleaners since 1865, has been making Sapolio abrasive cleanser in cake and powder form for Sapolio Products, Inc., since 1956. In that year, Sapolio discontinued its own manufacturing operations at 439 West Street, New York City, and moved to 1 Hudson Street.

Stanley has set up a Sapolio Soap Division to market Sapolio cleanser in cake and powder forms. These two products will now be sold through jobbers and distributors, to whom prices and samples will be sent. Stanley plans to modernize the packaging and reformulate the powder cleanser, which is currently packed in 14 ounce cans. The reformulated product will contain "instant" bleach and will be comparable in quality with other widely-advertised brands of scouring cleansers, according to Stanley.

The Sapolio name, at one time probably among the best known in the soap business, dates back to 1869. At that time the firm, which in 1876 was to become Enoch Morgan's Soap Co., decided to concentrate all of its promotional efforts on Sapolio cake cleanser. Morgan's traced its ancestry back to 1809, when the firm was established to produce candles and soap.

Sapolio cleanser in cake form is believed to have been the first of its kind on the market. In addition to the scouring cake cleanser, there was a full line of soaps bearing the Sapolio name.

Advertising for Sapolio cleanser, featured "Spotless Town," and appeared in newspapers and such large circulation weekly magazines as *Harper's*. This was the first soap product to be advertised on a large scale. Although the first year's advertising of Sapolio is not known, one authority estimated that in 1871 approximately $15,000 was spent for the purpose. In those days such a sum constituted a substantial advertising budget.

George F. Morgan, who became president of Enoch Morgan's in 1882, was responsible for the promotion of Sapolio. Later, his son Gen. John W. Morgan, who is still living, was connected with the firm. A major share of the credit for the success of Sapolio must go to Artemas Ward, advertising manager of Enoch Morgan's for 25 years and, in the opinion of many, a pioneer genius in the advertising field.

In 1951, the name of Enoch Morgan's Soap Co. was changed to Sapolio Products, Inc.

John T. Stanley Co. is in its 94th year. Founded by a young Englishman, John T. Stanley, the firm is one of the few remaining soap companies still family owned.

—★—

Pilot Names Thurmond V.P.

Charles D. Thurmond was recently appointed vice-president—corporate and chemical development for Pilot California Co., Los Angeles. He also was elected a director at a recent stockholders meeting. The firm manufactures surface active materials and is said to be a pioneer in the commercial use of low-temperature sulfonation.

Charles D. Thurmond

Mr. Thurmond was most recently with the chemicals department of Richfield Oil Corp., Los Angeles, and has been associated with Monsanto Chemical Co., St. Louis.

—★—

White King Ad Program

White King Soap Co., Los Angeles, is concentrating advertisements in southern California newspapers in its advertising program for the second quarter of this year. Ten advertisements for "Sun" liquid detergent, "White King" soap, water softener-conditioner, and "D" detergent and cleanser will feature special offers to homemakers. The company continues its sponsorship of television programs in that area as well as radio and television spot commercials and magazine advertising outside southern California.

—★—

Bon Ami Licensing Program

A local licensing program in Latin American countries for its products where bulk ingredients are readily available has been undertaken by Bon Ami Co., New York. The first country covered by such a licensing agreement is Colombia where a licensee in Bogota began distribution from his own local production on July 1st. Production quality, labelling, and advertising are supervised by the parent company in the United States and a royalty on sales is paid by the licensee.

According to the company, the new licensing policy was accelerated by increased national tariffs that in turn boosted retail prices. Bon Ami had been exporting its household cleaning products to practically every Latin American country for the past 50 years.

Negotiations are presently underway for additional franchise agreements, according to R. Paul Weesner, president.

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Professional hairdressers and beauticians have discovered the advantages of shampoos made with ULTRAWET 60L. This unique cosmetic grade alkyl aryl sulfonate is easy on the scalp. and leaves hair soft and lustrous.

ULTRAWET 60L is a pale yellow, viscous liquid composed of 60% organic alkyl aryl sulfonate and 40% water. It is immediately soluble in water and is clear and bright even at temperatures below 20° F.

Take a tip from the pros. Investigate Atlantic ULTRAWET 60L for *your* shampoo formulations. For full information, write or wire Chemicals Division, The Atlantic Refining Company, 260 South Broad Street, Philadelphia 1, Pennsylvania.

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In Europe: Atlantic Chemicals SAB, Antwerp, Belgium

In South America: Atlantic Refining Company of Brazil, Rio de Janeiro

Appeal Lever Cambridge Plant Closing

AN appeal to Unilever, Ltd., British owners of Lever Brothers Co., New York, urging reconsideration of a decision to close the original Lever plant at Cambridge, Mass., was voted by workers of the condemned plant at a meeting in Cambridge, last month.

Workers at the plant, which is scheduled to be closed permanently Sept. 30, authorized their union leaders to send a delegation to England to appeal their case.

Nearly 500 members of the International Chemical Workers, Local 116, A.F.L.-C.I.O. approved the plan. A member of the union and an economist will ask the company in England to reconsider the verdict to close the plant. Many non-union workers employed at the Cambridge plant of Lever were reported to have attended the mass meeting last month.

The union members also passed a resolution empowering the president of the union to make a survey of possible job openings at the company's other plants in Edgewater, N. J.; Hammond, Ind.; St. Louis, Mo., and Los Angeles. Unions representing employees in those plants are reported to have expressed a willingness to aid in the survey.

The decision to close the plant was announced June 4 by John Moser, Lever vice-president in charge of production. He said that "while the company regrets this action, a careful study of the situation reveals no feasible alternative."

The "Lever Standard", a company house organ, reported in its issue of June 24 that "the future of the Cambridge plant has been of increasing concern to the company since it became evident some years ago that detergents would replace to a large extent, soap products."

The "Standard" also quoted Mr. Moser as saying that "In effect, virtually all possible plans for keeping the plant going were appraised and then rejected because they were impractical and expensive. Too, no matter which course the company took, it was inevitable that there would be a severe reduction in staff.

"The changing character of our business and the age of the plant", Mr. Moser continued, "has virtually made the Cambridge plant obsolete. It is Lever's oldest soap-making facility. Its history and part of its structure, go back to 1897, when the company acquired a controlling interest in Curtis Davis & Co.

"Since that time, the plant has become a complex of many buildings of various shapes and sizes, all of which were designed for the manufacture of soap products.

"During the growth of the synthetic detergent business", Mr. Moser added, "the company made several efforts to convert part of the old soap-making facilities to the manufacture of synthetic detergents. These conversions have not been practical because the physical layout of the plant was unsuitable due to its piecemeal expansion over the years.

"Largely as a result of these factors," Mr. Moser pointed out, "the Cambridge plant has become our highest cost plant and offers no reasonable hope for improvement in this respect. Accordingly, continued production is impractical."

The entire production capacity of the Cambridge plant can be absorbed by other Lever manufacturing units without any appreciable capital expenditures for additional equipment, according to Mr. Moser. The production capacity of these modern plants is adequate for the needs of Lever's business for some time to come, he pointed out.

The regional accounting office, now housed in the Cambridge plant will be transferred to the Baltimore plant. Similarly, the district sales office will be relocated so as to continue to serve the New England market effectively. The plant property will be sold.

Mr. Moser stated that "an effort will be made to arrange transfers for employees to other Lever plants wherever possible." Otherwise "liberal" termination allowances based on years of service and age will be made. In addition to these allowances, many employees will be eligible for early retirement benefits, the Lever "Standard" pointed out.

—★—

New Sales Office Opens

A new sales office at 20800 Center Ridge Rd., Cleveland 16, was opened recently by the chemical division of General Mills, Kankakee, Ill., it was announced last month by Howard T. Von Oehsen, division manager of sales. The Cleveland office is the ninth sales office opened by the division in the past two years.

—★—

IF&F Appoints Sanders

The appointment of C. Ray Sanders as manager of the west coast division of International Flavors & Fragrances, Inc., New York, was announced last month by Charles P. Walker, president. For the past three years, Mr. Sanders was manager of the toiletries department, Rexall Drug Co., Los Angeles. Previously he was associated with Hudnut Sales Co. and Marie Earle, Inc., a subsidiary of Coty, Inc. In his new post Mr. Sandars is responsible for administration of the west coast branch, as well as direction of sales operations of the company's van Ameringen-Haebler division and the Polak & Schwarz division in 11 western states. He makes his headquarters at the firm's new branch office, 7461 Beverley Blvd., Los Angeles.

C. Ray Sanders

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Akyl Aryl Sulfonate...90% Minimum Active
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Fuller Appoints Carl General Manager

LESTER H. Carl, vice-president and a director of Fuller Brush Co., Hartford, Conn., has been named general manager of the company, it was announced last month by Avard E. Fuller, president. In his new position Mr. Carl directs all production activities at the company's Hartford, Albany, N. Y., and Canadian plants.

Lester H. Carl

With Fuller since 1945, Mr. Carl first served as industrial sales manager. He became assistant general manager in 1950, and was elected vice-president — production in 1956.

Meanwhile, Mr. Carl announced the appointment of George F. Muir, sales supervisor of the machine division, as plant engineer. Mr. Muir joined the company in 1939 and successively held the positions of development engineer, sales engineer of the machine division, and sales manager of the division.

Four other appointments also were announced in the merchandising department by Harold L. Hart, vice-president. Francis L. Smith has been named director of merchandising. Previously he was advertising manager, and has been with the company since 1948.

Archie E. Krips, formerly sales coordinator in the cosmetic division, is now sales promotion supervisor. He joined the company 32 years ago and was named to his former post in 1948.

Previously in charge of production of company publications, H. S. Ingraham has been appointed art and production supervisor. He joined the firm in 1941.

New publicity supervisor is Frederick E. Bieber who had been a member of the sales and advertising department. Mr. Bieber went with Fuller in 1949 as a sales promotion assistant.

—★—

New Breck Production Line

A new shampoo packaging line was recently put into regular operation at its West Springfield, Mass., plant by John H. Breck, Inc., Springfield, Mass.

In the process of installation and trial operation since early this year, the packaging unit, valued at $160,000, has enabled the company to increase its production capacity by nearly 100,000 units per day. The line is composed of eight individual machines connected by a series of belt conveyors. Major elements include an unscrambler from Machinery Service, Louisville, Ky.; an air cleaner, a 30-unit filler, an eight head capper, and a triplex labeler, all from Pneumatic Scale Corp., Quincy, Mass.; a cartoner from R. A. Jones & Co., Cincinnati, O.; a shelf wrapper from Scandia Packaging Machinery Co., North Arlington, N. J.; and a case sealer from Standard-Knapp Division of Emhart Mfg. Co., Portland, Conn. Tied into the line is a conveyor system made up of units supplied by Rapids-Standard Co., and Conveyor Specialty Co., both of North Quincy, Mass.

—★—

Fine Organics Buys Rhodes

The accounts and trade names of Rhodes Chemical Co., Plainfield, N. J., were acquired June 1st by Fine Organics, Inc., Lodi, N. J., it was announced recently by Nicholas M. Molnar, Fine Organics president. The Lodi firm now will produce the quaternary ammonium germicides, algaecides, fungicides, and deodorants formerly marketed by Rhodes. These products include "Cetab," "Ethyl Cetab," "Cetylon," "Rodalon," and "Cee-Dee." Production is being centralized at the Lodi plant and sales are handled by the organic chemical department of Fine Organics.

Thomas Glynn, plant manager, second from left, hands first package off newly installed shampoo production line to John H. Breck, Sr., board chairman, John H. Breck, Inc., Springfield, Mass., as Edward J. Breck, president, extreme left, and John H. Breck, Jr., executive vice-president look on.

Victor in Expansion

Expansion of the marketing activities of Victor Chemical Works, Chicago, to provide a basis

Emil B. Larson

of growth of the company's product lines and customer service was announced recently by Morris R. Stanley, vice-president–sales. The expansion involves both the general sales office and field sales activities of the company.

Emil B. Larson has been appointed manager of product sales in the newly formed product sales section. He is responsible for internal administration of the sales department's activities thus relieving Glenn Fite, sales manager, and Mr. Stanley for more intensive work in the areas of tonnage sales and long range sales planning.

The company also has established five regional sales offices in a move to decentralize marketing programs. The offices and their newly appointed regional sales managers are: central, Chicago, Richard C. Atherton; Great Lakes, Detroit, C. J. Darkins; eastern, New York, Rainsford F. Cotten; southern Nashville, Tenn., Edward G. Gemmer; and southwestern, Kansas City, Eugene V. Holm.

—★—

C. C. Campbell Retires

Colin C. "Duke" Campbell, in charge of publicity and public relations for Rohm & Haas Co., Philadelphia, retired June 30 to devote full time to personal interests in educational and charitable fields. He had been with Rohm & Haas since 1942, when he joined the firm to handle advertising. In 1948 he became head of advertising for all divisions when Resinous Products & Chemical Co. was merged with Rohm & Haas.

—★—

McKesson Acquires Barada

McKesson & Robbins, Inc., New York, completed an exchange of shares of its common stock early this month for all the outstanding stock of Barada & Page, Inc., Kansas City, Mo. The exchange followed an agreement between the companies which was announced last March.

Barada will operate as a McKesson & Robbins subsidiary and Walter M. Betts, who continues as president of Barada, has been appointed a vice-president of McKesson. In addition to the distribution of industrial chemicals, Barada repacks certain chemicals such as acids, solvents, chlorine, and ammonia.

—★—

Dragoco Names Fainberg

B. Fainberg has been appointed export manager of the international division of Dragoco, Inc., New York, it was announced last month by Henry G. Gribou, vice-president. For the past nine years Mr. Fainberg has been in charge of the export departments of Roure-Dupont, Inc., and its affiliate company, Floramatic, Inc., both New York.

B. Fainberg

Colgate Elects Two VPs

The elections of John Bricker to the newly created position of vice-president–marketing planning

John Bricker

in the corporate marketing department and Herbert P. Nack as vice-president of the company's newly created Colgate pharmaceutical laboratories division were announced last month by Edward H. Little, president and chairman.

Mr. Bricker recently rejoined Colgate after three years to become director of marketing planning (see *Soap and Chemical Specialties*, June 1959, p. 164). He previously was executive vice-president and a director of Outdoor Advertising, Inc., New York.

Mr. Nack recently went with Colgate from his post as director of the professional products division of Johnson & Johnson, New Brunswick, N. J. In his new position he is responsible for organizing and establishing the company's entry into the proprietary and ethical drug fields.

—★—

"Mr. Clean" Goes National

Last markets for "Mr. Clean," a liquid all-purpose household cleanser made by Procter & Gamble Co., Cincinnati, were opened in June making the product available throughout the United States. For the past several months the cleanser was introduced locally in various parts of the country. The product is packaged in 15-ounce and 28-ounce bottles.

W. C. Sanner

Frank J. Cerny

Robert E. Larkin

Economics Names Sanner

W. C. Sanner has been appointed director of the institutional division of Economics Laboratory, Inc., St. Paul, Minn., E. B. Osborn, president, announced recently. With the company since 1944, Mr. Sanner became sales manager of the division in 1949, supervising a field sales force in the United States and Canada.

Other appointments in the division include F. J. Cerny as eastern sales manager, and R. E. Larkin, as western sales manager under the direction of Mr. Sanner.

Mr. Cerny was appointed assistant sales manager for the division in 1952 and also has served as central regional manager in Cleveland. He joined Economics in 1939.

Assistant sales manager in the division since 1957, Mr. Larkin was employed by Economics in 1944. He also has been midwest regional manager in Kansas City.

New P&G Technical Center

Procter & Gamble Co., Cincinnati, is currently moving into its new home for product research and development activities for the foods and overseas divisions at the Winton Hill Technical Center, located about two miles north of the firm's facilities in Ivorydale, O. The move will give the company additional space in Ivorydale for product research and development of soaps, synthetic detergents, and other consumer product divisions. Most of the Winton Hill employees are moving from the Manufacturing Administration and Research building in Ivorydale.

Edwards Reilly Chairman

Carleton B. Edwards was elected board chairman last month of Republic Creosoting Co., and its subsidiary, Reilly Tar and Chemical Corp., both Indianapolis. Peter C. Reilly was elected president of the two companies. His brother, Thomas E. Reilly, continues as vice-president and now also serves as treasurer. Republic was incorporated in 1903 by their father, the late P. C. Reilly, Sr.

The new president has been associated with both firms since 1931. Republic is said to be one of the leading suppliers of preservative-treated wood and Reilly Tar is a producer of more than 400 chemical products, both by distillation of coal tar and by synthesis from other basic raw materials. The companies operate 14 plants throuhout the United States.

Carleton E. Edwards

Peter C. Reilly

Thomas E. Reilly

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Monsanto Appoints Two

James L. Brown recently was appointed supervisor of phosphorus and phosphoric acid sales for the inorganic chemicals division of Monsanto Chemical Co., St. Louis. Since 1956 he was a sales representative for the division at the Cincinnati office.

Another appointment was that of John P. Morrissey as a sales representative in the division. He has served as a technical service representative in the division's sales department since 1958.

—★—

New Beach Fabric Softener

A four-page folder of Beach Soap Co., Lawrence, Mass., describes the company's new fabric softener called "Fabrisof." The new liquid softener is ready to use and is packed in drums in net weights of 450, 125, and 42 pounds.

Toilet Bar Detergents

(*From Page* 145)

to an acid pH by addition of lactic acid has been referred to above. Citric acid or citrates can also be used for this purpose. In addition, these substances form water soluble complexes with radio active isotopes thus facilitating removal of such contamination from skin and clothing. (British patent 766,148)

An addition of pyrogenic silicate (silicic acid) will harden paste form detergents sufficiently so that they may be worked into milled toilet bars (British patent 783,223). An example contains.

	per cent
Alkyl sulfonate	16
Fatty alcohol sulfate	39
Silicate	12
Stearic acid	33

The stearic acid may be replaced by paraffin or polyethylene oxide wax, the silicate by aluminum or titanium oxide. (H. Manneck, *Seifen, Oele, Fette, Wachse,* 1958, No. 24, pp. 755-6, and No. 25, p. 782.) ★★

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New Hair Spray Polymer ..

A new resin copolymer which enables packers of aerosol hair preparations to vary the propetries of their products by regulating the degree to which the resin is neutralized to impart water solubility and film flexibility has been introduced by the resin division of National Starch and Chemical Corp., 750 Third Ave., New York 17, N. Y.

The copolymer, designated "Resyn 78-3010," said to be unrelated in chemical composition to any previously patented hair spray resins now in commercial use. As supplied to packers the resin will be water insoluble and in a dry pearl form. Water solubility is imparted in the packer's plant by neutralization with AMPD (2-amino-2 methyl-1, 3 propanediol).

The degree of this neutralization determines the properties of the final product: the greaetr the degree of neutralization, the greater the resin's water solubility and film flexibility. This feature, according to National Starch, will for the first time enable packers to control the working properties of hair sprays.

National says its new material is odorless and can be perfumed.

"Resyn 78-3010", according to A. G. Battaglia, resin division manager, is a complete replacement for aerosol hair spray resins now on the market. Its price is 75 cents per pound.

Nicolaas C. Van Vonno was recently named president of Hostwax Corp., New York, which was recently formed as a division of Hostachem Corp., for the sale and distribution in the U. S. of "Hoechst" waxes made by Farbwerke Hoechst AG., Frankfurt-Hoechst, West Germany. For the past seven years he was vice-president of Was De Wit, The Hague, Holland, wax manufacturers.

John F. Bales was named last month as executive vice-president of Yardley of London, Inc., New York. Previously he was vice-president—sales and continues to retain over-all responsibility for the sales department.

May We Put Some in Your Hands?

The Century Brand Oleic Acids pictured above have the following properties:

	Century 1050 L P White Oleic Acid	Century 1010 Distilled Oleic Acid
Maximum color, Lovibond	5Y/0.5R—5¼"	15Y/3R—1"
Acid value	197—203	195—201
Saponification value	198—205	197—203
Unsaponifiable content	1.5% max.	2.0% max.
Polyunsaturates	3% max.	

We would like you to see our Oleic Acids and compare them critically with other competitive products, so you may fully appreciate Century Brand quality. We invite your comparison of Century Brand Oleic Acids because only you can realize their advantages in *your* products.

A request to Dept. H-30 for samples will receive prompt attention and we will welcome the opportunity to put these better products in your hands.

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Letters

(*From Page* 41)

self) like Italy.

2.) We like the Italian people.

3.) We like the Italian eats (Pesta).

4.) We like the Italian scenery.

5.) We prefer to cover one country at a time and see everything worthwhile seeing.

A—Have been in France
B—Have been in England
C—Have been in Switzerland

And, still like Italy the best of them ALL.

Joseph Fuld,
Secretary - treasurer,
Fuld Brothers, Inc.
Baltimore

In the "Tale Ends" item referrel to by Joe we chronicled the fact that the Fulds were in Europe (Italy) and stated that we were "curious as an old hag and trying to find out why" they spent all their time in Italy. We have our answer, thanks. Ed.

Surfactant Plant

(*From Page* 50)

Tschakert's publications on the addition of the non-ionic polyoxethylene alkyl ethers to toilet soap has received widespread attention. One of the problems on which he is currently engaged is the development of high-efficiency, low-foaming detergents.★★

Appliance Trends

(*From Page* 55)

proportion for use. This might be analogous to the petroleum refiner's retail merchandising program of selling, under his label, a complete line of auto service and maintenance materials such as oil, grease, body polish and so forth.

"Scrapeless" Dishwashers

Although the recession of 1958 hit consumer durables the hardest, the dishwasher registered a small sales increase last year as compared to 1957. This is all the

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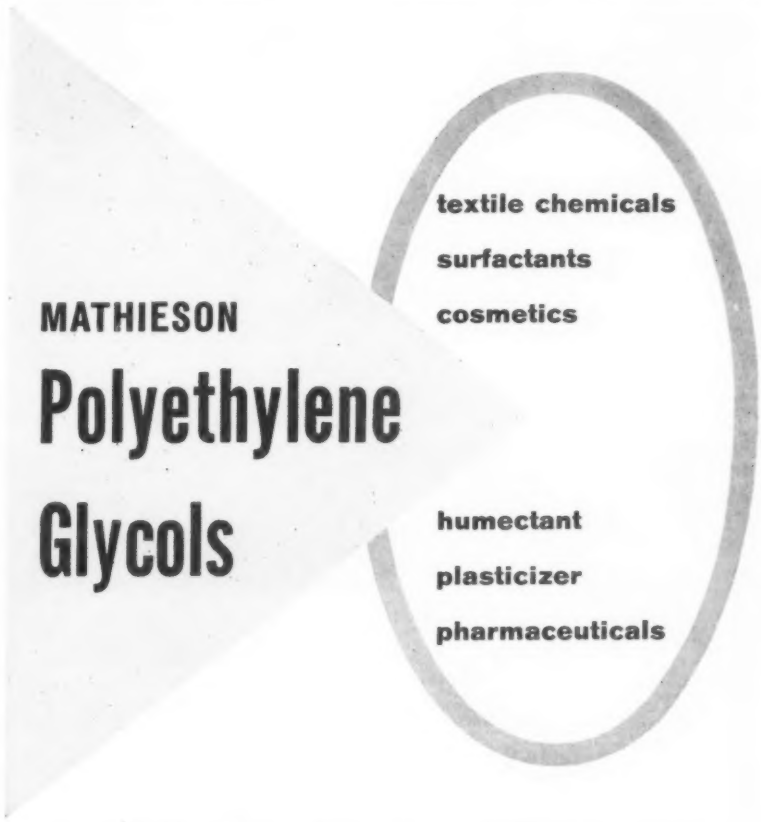
more remarkable considering the fact that consumer surveys tend to be quite consistent in reporting the dishwasher as a "luxury" purchase in the mind of the average consumer. In addition to the growth factors potentially inherent in low-saturation products, I think the dishwasher is benefitting from a rather basic improvement: For years, many women who did not own dishwashers pointed out that by the time the dishes had been scraped and then loaded and later unloaded, there was too little work saving over hand methods. This was especially true after the detergent industry developed special dishwashing detergents that largely eliminated wipe-drying of dishes. The many dishwashers on the market today which do not require scraping before loading thus considerably reduce the consumer objections to their purchase.

"Scrapeless" dishwashers pose new problems to the dishwasher manufacturer and, I think, to the detergent manufacturer. However, a problem is an opportunity. We have re-arranged our water spray nozzles, added rotating grinders in our drain lines, and stepped up water pressures to the maximum without damaging the dishes. I think the increases in dishwasher performance now are going to come from the detergent area – from research on the kind of detergent needed, its form, its method and frequency of application in relation to water and other present or possible additives. Here again, we may get into the area of reservoirs and dispensers of several wash additives, similar to automatic washers. Perhaps even more here than in home laundry there might be an opportunity to develop, and distribute as a "kit" a specialized mechanical dishwashing ingredients system. Water softening and sanitizing ingredients might be used as well as detergents and surface tension reducers in such combinations.

Although less frequent than dish and clothes washing, floor maintenance is one pretty onerous chore that is still performed in primitive fashion in the average home. I think there is a need for economically feasible machines to wash, scrub, dry, and wax hard surface floors in one continuous operation. There is a corresponding potential for a machine to shampoo, beat, and dry carpets and rugs. The technical know-how to do these jobs exists, we believe, and the barrier is economic. However, many firms are making some progress in this area and there is likely to be a practical breakthrough in the fairly near future. Examples of progress in the past year include, for example, a wand-type vacuum cleaner incorporating a powered beater, and, from different firms, rug shampoo dispensing devices. Perhaps some specialized detergent studies could develop the right material to permit combining machines into a once-over-only home rug cleaner.★★



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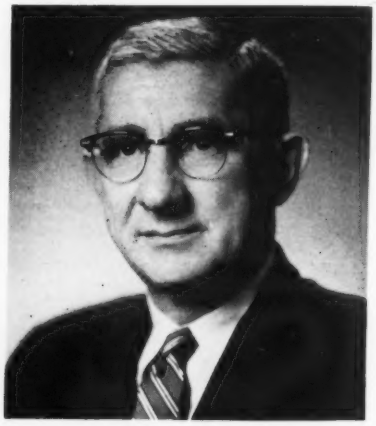
General Chem. Names VPs

Appointments of Vincent W. Suellau and Frank J. French as executive vice-presidents of

Vincent W. Suella



Frank J. French

General Chemical Division, Allied Chemical Corp., New York, were announced last month by I. H. Fooshee, division president.

Previously vice-president — sales for General since 1954, Mr. Suellau has been with Allied for 38 years. He also has served as director of sales and sales manager of the division's industrial chemical products.

Mr. French has been vice-president — production, mining, purchasing, and industrial service activities for the past year. Previously he was director of purchases and has been with Allied since 1929.

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Erskine Joins G-R-P

L. G. Erskine, Jr., joined Gillespie-Rogers-Pyatt Co., New York, last month as assistant to the president. A lawyer, Mr. Erskine was previously budget director for St. Regis Paper Co., New York, and prior to that was with Niagara Alkali Co., Niagara Falls, N. Y. He is working out of the company's New York executive offices.

—★—

New Odorless Deodorant

Discovery of an "odorless deodorant" said to work by fixation, a chemical reaction with the odor which results in adsorbing it, was announced recently by National Cylinder Gas division of Chemetron Corp., Chicago. R. W. Burmeister, head of NCG medical sales, described the chemical as not having a perfumed masking scent nor does it paralyze the sense of smell. He noted that cosmetic manufacturers and disinfectant formulators have employed the product as an additive to their own formulas. Other features claimed for the liquid deodorant are that it inhibits growth of molds and mildew, is non-toxic and non-allergenic, and will not irritate the skin, corrode metal, or stain.

NCG is supplying the product in aerosol containers and in concentrated form.

Nathan Stein was recently elected assistant secretary of Florasynth Laboratories, Inc., New York, manufacturers of basic materials for the cosmetic, drug, and food industries. With Florasynth since 1946, Mr. Stein has served successively as accountant and controller.

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U.S.I. Sales Exec. Changes

The appointment of three men to fill newly created sales management positions were announced recently by U.S. Industrial Chemicals Co., a division of Naational Distillers and Chemical Corp., New York.

W. E. Johnson

V. D. McCarthy

G. H. Stanton

T. R. Drinkwater

Warren E. Johnson has been named director of chemical sales; Vincent D. McCarthy is newly appointed director of plastic sales, and George H. Stanton will assume the position of director of field sales later this year.

In addition, Alden R. Ludlow, U.S.I. vice-president in charge of sales, announced that Thomas R. Drinkwater has been named manager of industrial alcohol and solvents sales for U.S.I., succeeding Mr. Johnson.

As director of chemical sales, Mr. Johnson is responsible for industrial alcohol, solvent, heavy chemical, sodium, organic chemical, intermediate and feed supplement sales, with the manager of each product group reporting to him.

Mr. McCarthy assumes responsibility for management of polyethylene sales, as well as plastic materials the company might produce at some time in the future.

Mr. Stanton will supervise the activities of regional sales offices. All three men will report to Mr. Ludlow.

Mr. Drinkwater has been with U.S.I. since 1947. He worked out of U.S.I.'s Chicago office until 1937, when he was made assistant to the manager of alcohol and chcemical sales, his most recent position.

—★—

Dahling Advanced to VP

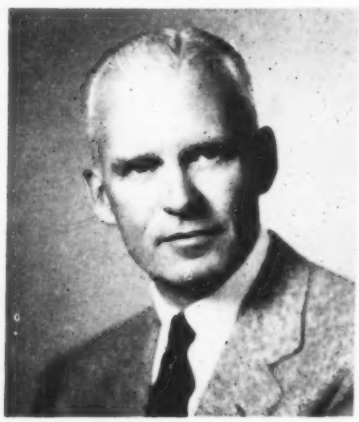
Robert O. Dahling has been advanced to vice-president – sales for Bon Ami Co., New York, it was announced early this month by Paul Weesner, president. Previously Mr. Dahling was assistant vice-president. He has been associated with Bon Ami for the past three years and was formerly general sales manager for American Steel Wool Manufacturing Co., Long Island City, N. Y.

—★—

Mitchell Gen. Mills V.P.

William F. Mitchell, general manager of the chemical division of General Mills, Minneapolis, for the past four years, was elected a vice-president of the company during a recent meeting of the board of directors. Mr. Mitchell, whose appointment was announced by C. H. Bell, president, joined General Mills in 1955 after 19 years with Pennsylvania Salt Manufacturing Co. (now Pennsalt Chemicals Corp.), Philadelphia.

William F. Mitchell



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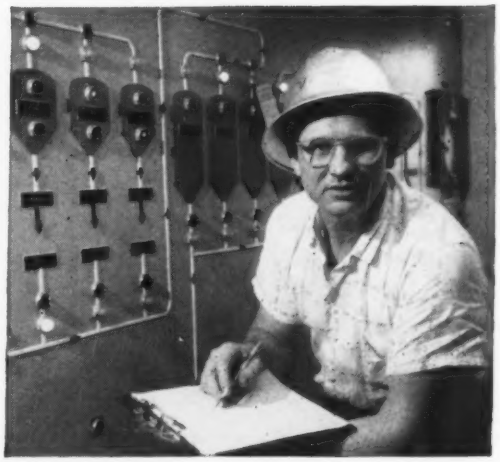

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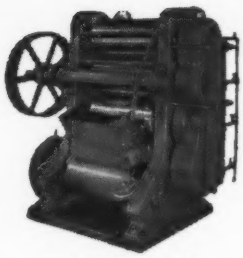

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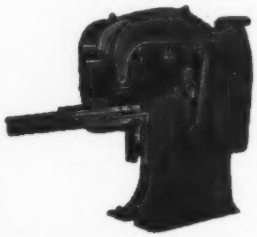

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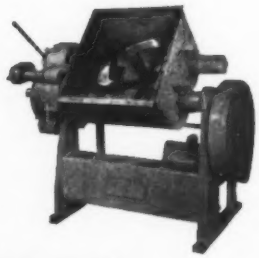

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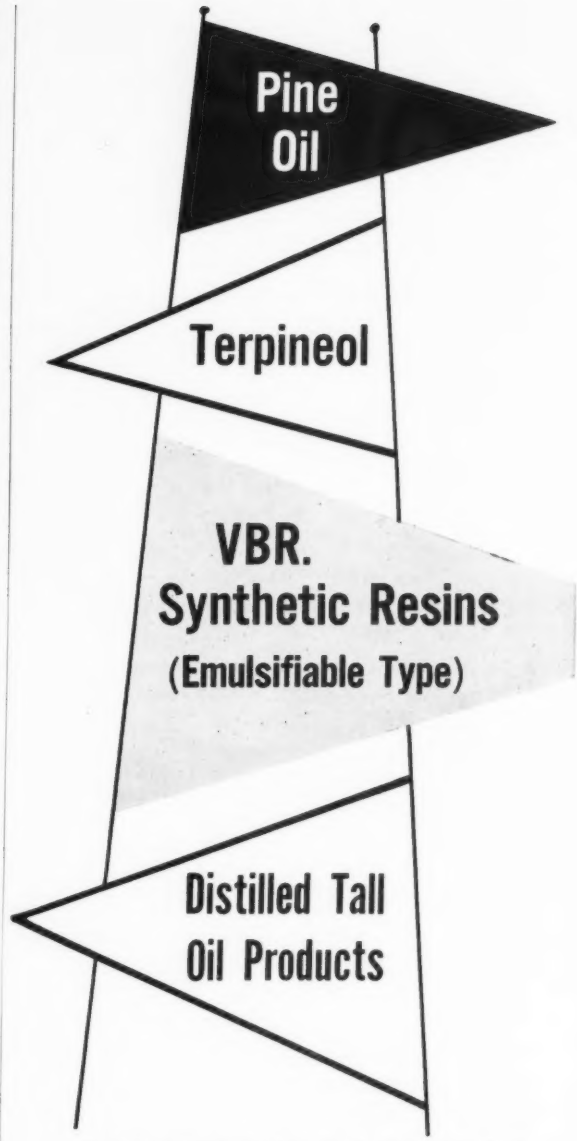

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Tech. Sales / Mkt. Development: B.S. 13 years experience in sales, market development, market research and sales administration in chemicals for food, drug, cosmetic, detergent, chemical specialties and related industries. Interested responsible position utilizing this background. Employed, available reasonable notice. Address Box 291, c/o *Soap*.

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J. H. Day and Robinson 50 up to 10,000 lb. Dry Powder Mixers.
Colton Model 140 Semi Automatic Stainless Steel Tube & Jar Fillers.
Stokes and Smith G1 G2, HG84, HG88 Auger Powder Fillers.
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Fred Crowhurst (left), vice-president of van Ameringen-Haebler (Canada) Ltd., welcomes Capt. T. Aaldijk of the freighter Prince William George Frederik to Toronto. The ship had just won a race to be first ocean-going vessel through the new St. Lawrence Seaway to reach Toronto. It carried general cargo from Holland, including a sizeable shipment of fragrance and flavor materials for Mr. Crowhurst's company. Also on hand to welcome the captain was Frank Vanvelsen, Canadian importer.

Heyden Appoints Three

The appointment of three new product sales managers was announced recently by Heyden Chemical division of Heyden Newport Chemical Corp., New York, manufacturer of "Strobane" insecticides. T. R. Aalto was named product sales manager of fine chemicals. Dr. Aalto was formerly manager of technical service and assistant to the vice-president—research and development. Previously manager of technical service, E. L. Barkley is now product sales manager of synthetic resin chemicals. He is succeeded by J. R. Hutchins. T. H. Risch has been appointed product sales manager of organic intermediate chemicals.

—*—

New Insecticide Carrier

F. W. Berk & Co., Ltd., Berk House, Portman Square, London W. 1., recently introduced a new carrier for formulating aerosol insecticides. Tradenamed "Sepiolite," it is a pure hydrated magnesium silicate claimed to have absorptive and adsorptive capacity.

Allied Appoints Morgan

Oliver M. Morgan was named last month as assistant to the executive vice-president of Allied Chemical, Canada, Ltd. Previously Dr. Morgan was director of chemical sales for National Aniline Division, Allied Chemical Corp., New York since 1955.

From 1930-34 he was a research chemist at the National Research Council of Canada, Ottawa. In 1934 Dr. Morgan came to the United States to become a research chemist with National Aniline and subsequently became manager of detergent sales and later assistant domestic sales manager.

Succeeding Dr. Morgan as director of chemical sales for National Aniline Division is Charles P. Berdell, who has been manager of sales in the General Chemical Division for Baker & Adamson laboratory reagent and fine chemicals. Mr. Berdell joined General Chemical as a salesman in 1946.

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Aerosols at Wanamakers

(*From Page* 129)

Chemical specialties for the house included: "Krylon Window Cleaner" spray; silicone spray polish, room deodorants (5 fragrances) including novel "House of Aerosols" deodorant, said to leave no after-odor.

Fluorescent paints were represented: cerise, lemon yellow, red orange, sunset, gold, green, yellow orange.

Also displayed were "Falcon" "Freon" boat horns, fire detecting systems, and National Carbon Co's "Eveready" spray gun.

The Wanamaker displays have attracted top attention without being garish or spectacular. The display is conservative to fit the general decor of the Wanamaker houseware department.

Central attention-getter is a diamond-shaped sign reading, "The House of Aerosols" over the main counter. The horizontally-elongated diamond is light blue and black. The top portion is light blue with white letters and the bottom section black with blue letters. Spray cans at the top and bottom of the diamond simulate sprays in operation and add a touch of motion. Glass wool sprayed with a cerise fluorescent paint is used to obtain this effect.

"There is no consumer awareness as to what specifically these products can do. This bears out the many depth surveys conducted by E. I. du Pont de Nemours & Co. stressing that an overwhelming majority favor aerosol packages over conventional packages when they have tried them.

"Consumer education is vital to the future growth of pressure packaging and I have selected the department store demonstration technique as the most logical means of accomplishing this purpose," Mr. Pickett said.★★

Slohm Joins First

David Slohm has been appointed to the sales engineering staff of First Machinery Corp.,

David Slohm

Brooklyn, N. Y., and its subsidiary company, The Falcon Manufacturing Division, it was announced last month by Fred R. Firstenberg, president. First Machinery specializes in plant equipment for the soap, chemical, cosmetic, and drug industries.

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Index to ADVERTISERS

Aero-Chem Laboratories, Inc. 133
Allied Chemical Corporation,
General Chemical Div. 31, 124, 125
National Aniline Division 33
Nitrogen Division 152
Semet-Solvay Petrochemicals Div. 96
Solvay Process Div. .....2nd Cover, 59
American Can Co. 126
Andersen, Dr. Carl N. 177
Argueso & Co., M. 170
Aromatic Products, Inc. 75
Atlantic Refining Co. 160
Averil, Inc. 133

Barr & Co., G. 118, 133
Blockson Chemical Co. 32
Books 28, 140, 185
Brockway Glass Co. 112
Builders Sheet Metal Works, Inc. 135

Candy & Co. 10
Chase Products Co. 133
Chemical Specialties Mfrs. Assn. 64
Colton Co., Arthur 144
Continental Can Co. 110
Continental Filling Corp. 122
Continental Oil Co. 17
Cowles Chemical Co. 138
Cox, Dr. Alvin J. 177
Crown Cork & Seal Co., Inc. 134

Darling & Co. 172
Dawe's Laboratories, Inc. 183
Dema Engineering Co. 103
Dodge & Olcott, Inc. 156
Dow Chemical Co., The 8, 9, 136
Dow Corning Corp. 94
Dreyer, Inc., P. R. 95
du Pont de Nemours & Co., E. I. 108
Durez Plastics Division 86

Eastman Chemical Products, Inc. 84
Emery Industries, Inc. 29
Enjay Co. 14
Ertel Engineering Corp. 144

Fairfield Chemical Division 88
Felton Chemical Co. 25
Fritzsche Brothers, Inc. 173

Gard Industries, Inc. 133
Gillespie-Rogers-Pyatt Co. 90
Givaudan-Delawanna, Inc. 40, 167
Glidden Co., The 180
Gottscho, Inc., Adolph 144
Gross & Co., A. 62
Guardian Chemical Corp. 174

Harchem Division, Wallace &
Tiernan, Inc. 168
Hercules Powder Co. 99
Hill Top Research Institute, Inc. 177
Hooker Chemical Corp. 34
Hudson Laboratories, Inc. 177

Jefferson Chemical Co. 148
Johns-Manville 175

Kiefer Machine Co., The Karl 140
Knox Glass, Inc. 121

La Wall & Harrisson 177
Leberco Laboratories 177

Mantrose Corp., The 78
Marchon Products, Ltd. 38
Mazzoni, S.p.A., G. 142, 143
McCutcheon, Inc., John W. 177
McLaughlin Gormley King Co. 66
Molnar Laboratories, Inc. 177
Monsanto Chemical Co. 76, 77

Newman Tallow & Soap
Machinery Co. 178
Norda 3

Old Empire, Inc. 182
Olin Mathieson Chemical Corp.,
Chemicals Division 102, 171
Onyx Oil & Chemical Co. 4

Penick & Co., S. B. 35
Pennsalt Chemicals Corp. 119
Peterson Filling & Packaging
Corp. 116, 133
Philadelphia Quartz Co. 36
Pilot California Co. 11, 162
Precision Valve Corp. 128
Prentiss Drug & Chemical Co. 92
Price, Dr. Donald 177
Procter & Gamble Co. 42

Rapids Machinery Co. 146
Rawleigh Co., W. T. 133
Reichhold Chemicals, Inc. 105
Rhodia, Inc. 30
Robertet & Cie, P. 91
Rohm & Haas Co. 18
Roure-Dupont, Inc. 60, 61

Schimmel & Co. 150
Scientific Associates 177
Scientific Filter Co. 183
Shulton, Inc. 15
Sindar Corp. 82
Fostern D. Snell, Inc. 177
Solvents & Chemicals Group, The 169
Spraying Systems Co. 182
Stalfort & Sons, Inc., John C. 130, 133
Stepan Chemical Co. 7
Sterwin Chemicals Inc. 100
Stillwell & Gladding, Inc. 177
Sun-Lac, Inc. 133

Testfabrics, Inc. 179
Thomasson of Pa., Inc. 133

Ultra Chemical Works 44
Ungerer & Co. .....3rd Cover
Union Bag-Camp Paper Corp. 166
Union Carbide Corporation,
Silicones Division 65
Union Carbide Chemicals Co., Div. 132
Union Standard Equipment Co. 181
U. S. Borax & Chemical Corp. 6
U. S. Bottlers Machinery Co. 146
U. S. Industrial Chemicals Co. 19, 20

van Ameringen-Haebler,
Inc. .....87, 4th Cover
Van Dyk & Co., Inc. 170
Verley & Co., Albert 27

Wells, F. V. 179
West End Chemical Co. 154
Western Filling Corp. 133
Western Petrochemical Corp.,
Warwick Wax Division 158
Westvaco Chlor-Alkali Div. 16
Westvaco Mineral Prods. Div. 26
Wisconsin Alumni Research Found... 179
Wyandotte Chemicals Corp. 12, 13

Zinsser & Co., William 180

COMING MEETINGS

Aerosol Clinics (sponsored by Aerosol Division of CSMA), New York City, Oct. 17; Chicago, Oct. 24; meeting places to be announced.

American Chemical Society, national meeting, Atlantic City, N. J., Sept. 13-18.

American Oil Chemists Society, annual meeting, Statler Hilton Hotel, Los Angeles, Sept. 28-30; spring meeting, Baker Hotel, Dallas, April 4-6, 1960.

Association of American Soap & Glycerine Producers, 33rd annual convention, Waldorf-Astoria Hotel, New York, Jan. 20-22.

Canadian Manufacturers of Chemical Specialties, second annual meeting, Royal York Hotel, Toronto, Nov. 2-4.

Chemical Specialties Manufacturers Association, 46th annual meeting, Mayflower Hotel, Washington, D. C., Dec. 7-9; 46th midyear meeting Drake Hotel, Chicago, May 16-18.

Drug, Chemical & Allied Trades Section, 69th annual meeting, Sagamore Hotel, Bolton Landing, Lake George, N. Y., Sept. 17-20.

Industrial & Building Sanitation - Maintenance Show and Conference, N. Y. Trade Show Building and New Yorker Hotel, New York, Sept. 22-24.

National Agricultural Chemicals Association, 26th annual meeting, French Lick - Sheraton Hotel, French Lick, Ind., Oct. 21-23.

National Hotel Exposition, 44th annual show, Coliseum, New York, Nov. 2-6.

National Packaging Show, Convention Hall, Atlantic City, N. J., April 4-8, 1960.

National Pest Control Association, annual convention, Biloxi, Miss., Oct. 19-22.

National Sanitary Supply Assn. 37th annual convention, Fountainebleau Hotel, Miami, Fla., May 22-25, 1960.

Packaging Institute, 21st annual forum, Statler Hotel, New York, Nov. 17-19.

Packaging Machinery Manufacturers Institute, show, Coliseum, New York, Nov. 17-20.

Society of Cosmetic Chemists, New York Chapter, monthly meetings, New Yorker Hotel, Sept. 9, Oct. 7, Nov. 4.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Roosevelt Hotel, New York, Sept. 15; Oct. 13; Nov. 4; and Dec. 2.

Toilet Goods Association, scientific section, Waldorf-Astoria Hotel, New York, Dec. 1, 1959; May 11, 1960. 25th annual meeting, Poland Springs House, Poland Springs, Me., June 27-29, 1960.

Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco, Aug. 11, 12 & 13.

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* * * *

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Volume II—860 pages, 26 illustrations. Covers processes for synthesizing surfactants, composition of surfactants and their chemistry and application. Price $19.50.

* * * * *

3. Detergent Evaluation and Testing by Jay C. Harris.

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* * * * *

4. Soap Manufacture by Davidson, et al.

Volume I—537 pages, 66 illustrations, 118 tables. Covers history of soap, principles of soap manufacture, fats and other raw materials for soap manufacture. Price $13.50.

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* * * * *

5. Modern Chemical Specialties by Milton Lesser.

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Tale Ends

SOAP and detergent bar sales in Japan may be in for a sharp upswing if other public bathhouses in that country copy an idea of a Tokyo bathhouse. The number of customers in the Tokyo bathhouse doubled when a TV set was installed over each tub. Many customers, we hear, are paying for two baths in order to watch interesting programs until the very end.

* * *

The photograph of Cyril G. Fox for the front cover of this month's issue of Soap was by all odds the most difficult one to come by we have ever experienced. In fact, we've been waiting for it close to ten years, or since he was first elected president of Fels back in 1950. When Mr. Fox was reelected last month, we called Max Brown, Fels' vice-president in charge of sales, and asked him to give us a hand. In his urbane manner, Max telephoned Mrs. Fox and asked her to have her husband bring his photograph to the office the next day. The strategy worked like a charm. No fuss, no muss, no bother and we had our picture. No wonder Fels has just selected Max to be vice-president in charge of sales!

* * *

The excellent article on Lever Brothers Co., appearing in the June issue of "Fortune," contains an anecdote that gave us quite a chuckle. The article quotes a grocery chain executive as saying: "It's an axiom in the trade that all soap salesmen are bastards. For what it's worth, Lever salesmen are the nicest bastards in the world." How's that for praise?

* * *

In an age of diversification we think R. E. Dumas Milner, owner of Dumas Milner Corp. (maker of "Pine-Sol," "Perma Starch") and operator of 101 miscellaneous enterprizes in Mississippi, takes the cake. In addition to owning King Edward Hotels in Jackson, Miss., and Beaumont, Tex., Mr. Milner recently acquired a motel near Biloxi. Mr. Milner, you may recall, also submitted a bid recently on the New York City subway system. Gentlemen: The chemical specialties industry has a 21-karat tycoon in its midst!

* * *

Now Hear This: Victor E. Williams, divot digger ordinary of Long Island and points north, finally made a hole-in-one. Vic sank his tee shot on the par 3, 15th hole on the upper course at Baltusrol C. C. in Springfield, N. J., a few weeks back. A regional vice-president of Monsanto Chemical Co., with headquarters in New York, Vic is the oldest employee in terms of years of service with the firm. He joined Monsanto on Dec. 13, 1915.

* * *

A boost for aerosol shave lathers, and of all places, in Utah. Rules just issued by the state business regulation department prohibit barbers from using shaving mugs and lather brushes. Henceforth Utah barbers must dispense lather from canisters or machines. In addition, barbers must sterilize the brushes they use to whisk away cut hair and they can use them only if they get the customer's permission. Now, if aerosol shave lather marketers could persuade other state legislatures or health departments to emulate this Utah law pressure packaged lather sales could really climb.

* * *

Hardly had "Bridget," P&G's latest entry in the liquid detergent field, hit the shelves of grocery stores in the Omaha test market when rumors began to be heard that liquid "Tide" would be next. Scared hell out of more than one soap-detergent marketer, we hear.

* * *

We should have known better: John L. Marana, whose picture appears on page 71 of the June issue, is with Western Filling Corp., Los Angeles, not Par Industries, as we said in the caption on Page 70. Also, the second letter of Mr. Marana's name is "a" not "o". John is president of Western and his picture and stories about him have appeared in *Soap* several times previously, all of which makes our boo-boo the more difficult to understand. Please forgive us, John

* * * * *

Bob Solly, possessor of probably the best baritone singing voice in the soap business, and prez of Harley Soap Co., Philadelphia, was featured recently as the "Citizen of the Week" in the "Ambler Gazette." Among other things the newspaper article points out about Bob is that he is a baseball enthusiast and last year managed a team in Little League. This year he's serving as an umpire. Bob, who also was a member of the Glee Club and a member of the male quartet while attending Temple University, is married to a singer. Mrs. Solly has been directing productions at the Music Theatre of Abington in which her husband has starred. These include "Guys and Dolls," "Kiss Me Kate," "The Student Prince" and others. The Solly's have two boys. Mrs. Solly, incidentally, appeared as the "Rose Queen" at the National Rose Show in Philadelphia, last month.

* * *

Fleas resistant to detergents are a must if flea circuses are to continue in Australia. Yup, that's what Australia's last flea circus proprietary stated recently. He said he has given up his circus because he is unable to replace performers.

Modern sanitation and hygiene have just about made it impossible to obtain recruits. The flea circus proprietor, Mark Clarke, revealed that the main problem of a flea circus owner was to train fleas to walk instead of jump. Now, he added, soaps and detergents on the market are too much for performing fleas.

Insecticide manufacturers please note.

Fred and Mrs. Lodes and son, Peter, and daughter, Pat, as they sailed from New York last month aboard the American Export liner S. S. "Constitution." Debarking at Naples, Italy, they will spend several weeks abroad. Mr. Lodes is president of Lodes Aerosol Consultants, Inc., New York.

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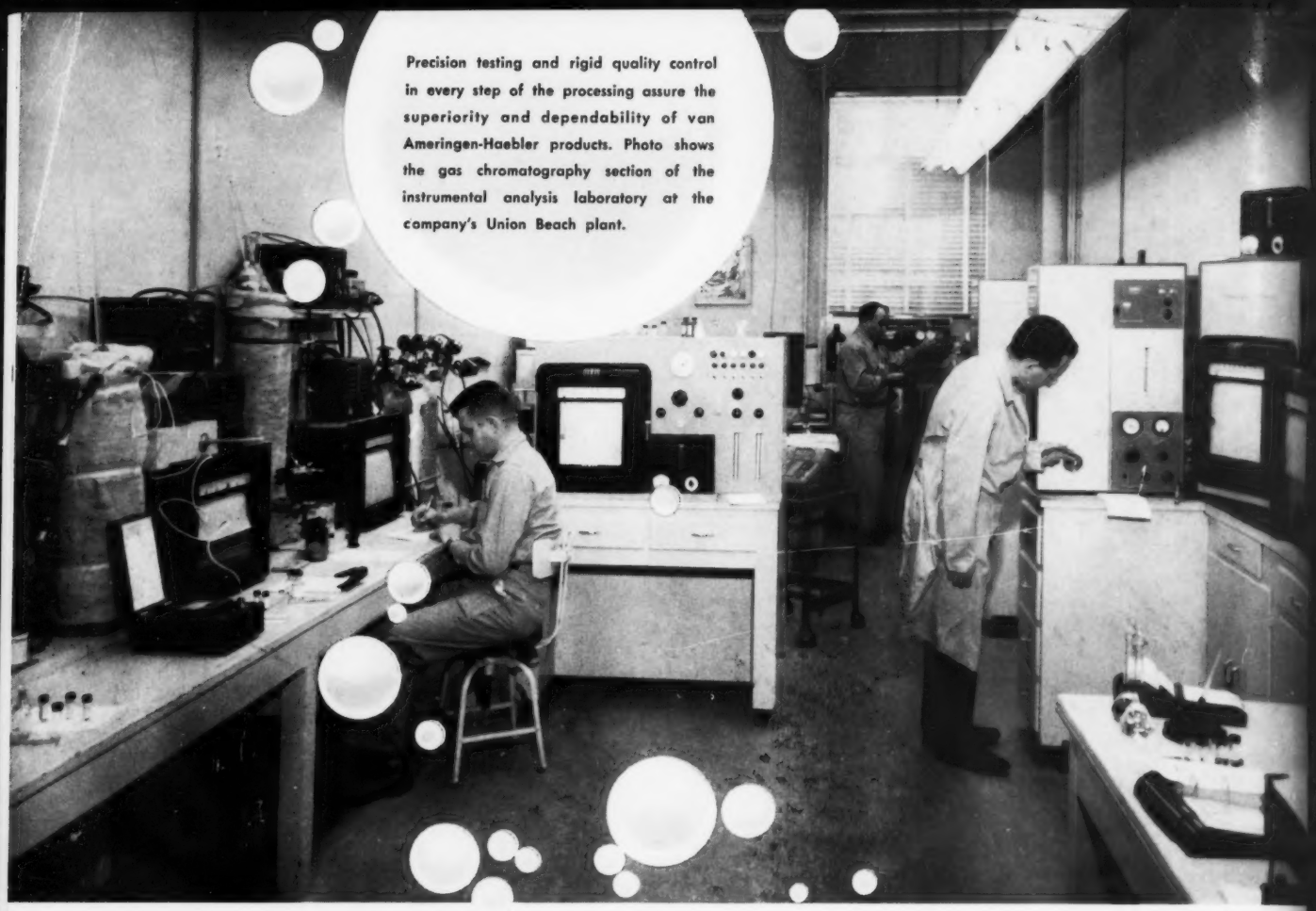

Precision testing and rigid quality control in every step of the processing assure the superiority and dependability of van Ameringen-Haebler products. Photo shows the gas chromatography section of the instrumental analysis laboratory at the company's Union Beach plant.

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